Economic Impact of U.S. Racial Dynamics: Evidence from the Stock Market *

Matthew Denes
Carnegie Mellon University

Duane J. Seppi
Carnegie Mellon University

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Abstract

Social issues about racial bias and inequality are receiving growing attention globally. We study the impact of racial dynamics on stock prices as a forward-looking window into expected real effects in firms. Following the murder of George Floyd, days with major race-related events have greater information arrival, and the average net accumulated abnormal return is 5.5%. These effects are concentrated around events with heightened attention. The economic mechanisms operate through changing expected cash flows of firms with high retail ownership and lower social engagement and diversity. Overall, our findings highlight that racial dynamics impact firms and potentially reduce costly bias.

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Disclosure Statement

Matthew Denes

I have nothing to disclose.

Duane Seppi

I have nothing to disclose.

1 Introduction

Corporate valuations reflect the environment — economic, political, legal, and social — in which companies operate. A broad literature documents that stock prices react to, for example, mergers (Betton, Eckbo, and Thorburn (2008)), earnings announcements (Dechow, Sloan, and Zha (2014)), Federal Reserve policy (Cieslak, Morse, and Vissing-Jorgensen (2019)), and political connections (Fisman (2001)).[1] Over the past decade, there has been growing global attention to social issues centering on racial inequality and bias towards underrepresented groups.[2] An association of leading U.S. CEOs stated that, "As the employers of more than 15 million individuals of all backgrounds, whose diversity strengthens our institutions, Business Roundtable CEOs are deeply concerned about the racial bias that continues to plague our society."[3] In this paper, we ask whether stock prices respond to racial dynamics, providing new evidence of expectations about real effects at U.S. firms.

We study valuation effects during a period of heightened attention to racial issues. In the United States, the murder of George Floyd on May 25, 2020 precipitated a series of events about racism and discrimination. Our empirical approach evaluates the impact of these events on firm-level stock prices. Since potential changes enacted within firms to these events might occur over many years, our focus is on stock prices, which incorporate the expected effects of social issues. Stock prices could respond to race-related events based on changes in expectations of future cash flows or discount rates. If changing social attitudes about race, which we refer to as racial dynamics, push firms to pursue activities inconsistent with value maximization, there could be a negative expected effect on stock prices. Alternatively, if the events lead to reduced costly implicit and explicit bias, stock prices might respond positively. Yet another possibility is that racial dynamics might not impact expectations of cash flows

[1] A related literature studies the importance of legal institutions for economic growth and financial development (e.g., La Porta et al. (1998)).

[2] In Australia, recent social pressure has focused on Aboriginal rights (e.g., "The 'Gap' between Aboriginals and Other Australians" in *The Economist*, February 27, 2018). In Brazil, there is ongoing activism about racial disparities, especially for Black Brazilians (e.g., "Black Man's Death After Beating by Security Guards Sparks Protests Across Brazil" in the *Wall Street Journal*, November 22, 2020). In France, there is attention to the treatment of Arabs (e.g., "Protests and Sorrow After Fatal Police Traffic Encounter in France" in the *New York Times*, June 28, 2023).

[3] See `https://www.businessroundtable.org/business-roundtable-ceos-stand-against-racial-injustice`.

or discount rates in which case stock prices do not change.

We gather comprehensive data on events in the United States regarding the deaths of Black Americans, related protests, and government responses, which we refer to as race-related events. Using objective criteria detailed in Appendix A, we classify each event as social change, which improves racial attitudes, or status quo, which reinforces existing attitudes about race. The sample period for most of our analyses starts on May 25, 2020 and ends on August 31, 2020. We also examine an extended period beginning on January 1, 2014, which is the year of the first Black Lives Matter protest. Our sample includes up to 5,112 firms located in the United States. The Fama-French three-factor model is used to construct daily abnormal returns. We measure the arrival of valuation-relevant information using absolute abnormal returns and volume, and directional impacts using signed abnormal returns.

Our first set of analyses evaluates the stock-price effects of race-related events. We find that absolute abnormal returns are 35.7 basis points higher on days with race-related events. Additionally, there is a significant increase separately on social-change and status-quo event days. We also show that volume rises by 23.5% on race-related event days, along with increases on classified event days. The effects for race-related events are economically sizeable, ranging from 7.6% to 43.3% of the corresponding response to firm earnings announcements. This evidence indicates there is greater information arrival related to firm valuations on days with race-related events.

We continue by examining the directional impact of race-related events. There is a positive effect of 16.3 basis points on days with race-related events, which incorporates the net impact due to social-change and status-quo events. Aggregating across all days with race-related events in our sample period, the estimated cumulative net abnormal return is 5.5%. We also separately evaluate the effects for social-change and status-quo events. Abnormal returns increase by 28.2 basis points on social-change event days, while there is no significant change on status-quo event days. This highlights that the directional response is, on average, driven by social-change events. Our baseline findings are robust to alternative approaches for estimating standard errors, controlling for macroeconomic news and firm-specific earnings announcements, adjustments for price-measurement accuracy, and different estimations of

factor loadings.

Several potential economic mechanisms link firm characteristics with stock-price responses to race-related events. First, the impact of these events might be amplified at firms that are relatively more receptive to social pressure, which we term the *receptiveness* hypothesis. This hypothesis posits that social pressure can impact the future decision-making by firms. Second, social-change (status-quo) events might be better (worse) news for firms that are relatively more engaged on social issues and have more diversity, which we refer to as the *well-positioned firm* hypothesis. Third, the *costly bias* hypothesis has the opposite predictions. In particular, for firms that are comparatively less engaged on social issues and have less diversity, social-change (status-quo) events could be better (worse) news. This could occur if the potential economic gains from reduced explicit and implicit bias are greater at firms where there is more scope for improvement. Fourth, social-change events might induce more progressive firms to pursue activities that are inconsistent with value maximization, which we call the *woke capitalism* hypothesis.

Our second set of analyses studies economic mechanisms explaining stock-price responses to race-related events. We begin by evaluating the role of a firm's decision-making, as measured using ownership and monitoring, on the impact of race-related events on stock prices. We find that abnormal returns at firms with high retail ownership are 35 basis points higher for social-change events and 14.9 basis points lower for status-quo events. This suggests that firms with more retail investors are more likely to respond to social pressure from race-related events. We proxy for monitoring with low corporate governance from a firm's Environmental, Social, and Governance (ESG) rating, which could indicate managers are less receptive to influence by equityholders. We show that abnormal returns at firms with low corporate governance are only 8.9 basis points higher on social-change event days, but they are 16.7 basis points lower on status-quo events days. When we include the ownership and monitoring measures in the same specification, we find that ownership by retail investors drives the receptiveness of firms to social-change events. These results are consistent with the receptiveness channel, suggesting that there are expected changes at firms more receptive to social pressure.

Firms differ in their social engagement and diversity. We use two measures of social

engagement: a firm's social score from its ESG rating and its engagement on social media about race. Due to the importance of a firm's ownership, we split the sample into firms with high and low retail ownership for the remaining channel analyses. For firms with high retail ownership, abnormal returns increase by 23.0 and 31.9 basis points at firms with low social scores and no engagement on social media about race, respectively. There is no effect for similar firms on status-quo event days and the estimates attenuate for those with low retail ownership. We also examine two measures related to a firm's diversity: the share of Black managers in its industry and employee racial-discrimination complaints based on a firm's industry and size. For firms with high retail ownership, abnormal returns are 23.9 basis points higher at those with low manager diversity on social-change event days and 28.6 basis points lower at firms with high racial-discrimination complaints on status-quo event days.

The results on firm social engagement and diversity offer insights into which mechanisms explain the stock-price response to race-related events. The evidence is broadly consistent with the receptiveness and costly bias hypotheses as the stock-price response for firms with high retail ownership is generally amplified at those with less social engagement and lower diversity following social-change events. This suggests that the economic impact of changing racial attitudes tends to accrue at firms where there are sizable economic gains from reducing bias. These findings are mostly inconsistent with the well-positioned firm hypothesis. There is also no evidence of the woke capitalism hypothesis since the effects of social-change events are still positive for progressive firms with high retail ownership. Additionally, our results suggest the mechanisms primarily operate through their impact on expected cash flows, in contrast to a discount-rate channel, which predicts a lower cost of capital at more progressive firms due to clientele effects from increased ESG investing following social-change events.

We also explore characteristics related to a firm's market position. We examine three measures: a firm's exposure to U.S. sales, size, and proximity to retail customers. For firms with high retail ownership, we find that abnormal returns are 25.5 basis points higher for social-change events and 24.2 basis points lower for status-quo events at those firms with sales primarily based in the United States. We similarly show that stock prices increase by 37.9 basis points on social-change event days for smaller firms with high retail ownership. In these regressions, there is no effect of a firm's proximity to retail customers. These findings

indicate again that race-related events impacted firms' expected cash flows.

What is the relative importance of the preceding characteristics in explaining a firm's stock-price response to race-related events? We use machine learning to answer this question. We estimate a LASSO regression where the potential explanatory variables are race-related events, firm characteristics, pairwise interactions between the events and firm characteristics, and all triple interactions of high retail ownership with the pairwise interactions.[4] There are several notable findings from this machine-learning approach. First, interactions between race-related events and firm characteristics are frequently selected in connection to a firm's social engagement, diversity, and market position. Second, a firm's ownership is particularly important for explaining the stock-price response to race-related events, especially for firm characteristics related to its market position. Third, most of the variables selected are consistent with the costly bias hypothesis.

While the previous results indicate that stock prices responded to the events following the murder of George Floyd on May 25, 2020, public attention to issues of race was elevated prior to this period. We investigate the effect of race-related events starting in 2014, which was the year of the first Black Lives Matter protest. In this extended sample, we evaluate whether there is a differential effect on or after May 25, 2020. We find that absolute abnormal returns are significantly higher on social-change and status-quo days in this later period, suggesting that race-related events contained more valuation-relevant information during this later part of the sample. We also examine the directional effects of race-related events. Abnormal returns are 41.1 basis points higher on social-change events days and 17.6 basis points lower on status-quo event days during the later period. Taken together, these estimates suggest that the effects of race-related events mainly stem from the events after the murder of George Floyd.

Our last set of analyses investigates the role of attention in driving the stock-price response to race-related events. We measure attention using daily posts on Twitter using race-related terms. In both the later sample period and the extended sample, we determine the event days with above-median activity on social media. For both samples, absolute abnormal returns and volume are significantly higher for race-related events when there

[4]Section 7.4 details the LASSO approach that we implement, including how parameters are selected.

is relatively higher attention. This suggests high-attention events have more valuation-relevant information. We continue by examining abnormal returns and similarly find that the directional effects are largely driven by those events with high attention in both samples. Combined with the findings on changes over the sample period, the results highlight that social issues can impact firms following particular events that are highly visible and draw attention throughout society.

Stock-price responses provide a window into the expected effects of racial dynamics on economic activity. We find substantial increases in information arrival and higher returns on days with race-related events. The evidence highlights that effects are heightened at firms with higher retail ownership and less engagement on social issues. Valuation responses changed following the murder of George Floyd and for events with greater attention. Taken together, our findings offer novel insights into the interaction between social issues and firms. From a social and public policy perspective, these findings are of interest because about 48% of the U.S. economy is organized through firms.[5]

We contribute to the literature on Corporate Social Responsibility (CSR) motives at firms and its connection with ESG, which has been extensively studied in finance (Gillan, Koch, and Starks (2021)) and economics (Kitzmueller and Shimshack (2012)). While much of the extant work has focused on environmental and governance features, we focus on how social issues impact firm valuations. Consequently, our findings are related to evidence on the stock-price reactions to firm-specific CSR and ESG. Stock prices respond positively when CSR-related shareholder proposals are passed (Flammer (2015)), following successful ESG engagements (Dimson, Karakaş, and Li (2015)), and for mergers completed by high-CSR acquirers (Deng, Kang, and Low (2013)). There is also evidence stock prices drop after the announcement of negative CSR events (Krüger (2015)) and corporate philanthropic contributions (Masulis and Reza (2015)). Further, institutional ownership is connected to firm-specific social values (Hong and Kacperczyk (2009) and Hong and Kostovetsky (2012)). Consistent with prior evidence, our results show that stock prices respond positively to events improving social attitudes about race and are related to firm ownership.

[5]This calculation is based on U.S. nonfinancial corporate revenue relative to U.S. gross domestic product in 2020Q2 using data from the U.S. National Accounts.

Several recent papers examine firms around a few events in our sample, including the murder of George Floyd and Black Lives Matter protests. In contemporaneous work, Ba, Rivera, and Whitefield (2023) study U.S. public firms with police departments as customers around seven events related to the death of Black Americans, and find a positive effect at 23 firms with strong police connections. Also related, Balakrishnan et al. (2023) report negative stock-price reactions to disclosures of racial problems in company conference calls following the murder of George Floyd and a positive reaction to subsequent diversity-increasing board appointments. Bogan, Potemkina, and Yonker (2024) show that there has been almost a tripling of Black directors after the murder of George Floyd. Karpoff et al. (2024) find that firm investments in diversity, equity, and inclusion (DEI) increased following the murder of George Floyd. Hacamo (2024) examines the effect of boycotts on racial discrimination. In comparison, we study stock-price reactions by all firms in the United States around a broad set of events connected to racial issues, shedding light on mechanisms explaining the stock-price response.

Lastly, our results add to the growing evidence at the intersection of finance, economics, and race. There are racial differences in access to capital and loans for Black businesses (Chen, Chen, and Sun (2021) and Howell et al. (2024)), startup founders (Cook, Marx, and Yimfor (2024)), consumers (Butler, Mayer, and Weston (2023)), and homeowners (Gupta, Hansman, and Mabille (2024)). There is also evidence of racial bias in analyst firm valuations (Rupar, Wang, and Yoon (2024)). Prior research shows the impact of leadership demographics, including the valuation effects of mandated female board representation (Ahern and Dittmar (2012)) and lower return volatility at firms with higher leadership diversity (Bernile, Bhagwat, and Yonker (2018)). Further, a large literature in economics studies racial discrimination (Lang and Spitzer (2020)). Our paper connects to studies evaluating the economic effects of social issues. The Arab Spring uprising impacted stock prices of Egyptian firms (Acemoglu, Hassan, and Tahoun (2018)) and antisemitism affected the valuation of firms with Jewish board members during the Dreyfus Affair in France (Do et al. (2024)). We provide systematic evidence on the valuation effects of U.S. social issues during a recent period when they received heightened attention.

2 Hypothesis development

Several economic theories model racial bias and its effects. Becker (1957) proposes a model of taste-based prejudice by decision-makers. In this model, bias distorts economic decision-making. Another approach models bias in relation to costly informational frictions. The statistical discrimination model of Phelps (1972) and Arrow (1973) attributes conditioning on demographic characteristics to incomplete information due to a lack of familiarity about other races and genders. More recently, Bohren et al. (2023) highlight that inaccurate beliefs can lead to inaccurate statistical bias. All three approaches have a common implication:[6] Reducing bias (along with its associated distortions and informational frictions) might increase economic activity, and firms could receive a share of the economic gains.

We study the impact of recent race-related events on stock prices as a forward-looking measure of the effect of racial dynamics in society on firms. Stock prices could respond to race-related events due to changes in expectations of future cash flows or discount rates. Major events connected to race call attention to and reveal information about racial attitudes and conditions in society and, thereby, influence future racial dynamics. These dynamics potentially include changes in explicit and implicit bias in attitudes and behavior of managers, employees, customers, and investors that possibly affect a firm's cash flows and cost of capital. While the real effects might not be immediate, forward-looking investors incorporate expectations about future changes into current stock prices. The effects of race-related events on stock prices might be amplified at particular firms. For example, firms with more diverse managerial teams may be better able to compete in less biased labor and output markets. Alternatively, companies with greater race problems due to explicit or implicit bias may benefit disproportionately from social pressure that induces them to solve these problems and thereby capture potential gains from reduced costly bias. A possible discount-rate channel is that improving racial attitudes may affect stock prices via increased ESG investment demand for firms with better reputations on race and reduced bias. We study specific channels in Section 7.

[6]There are differences between the different theories of bias on other dimensions. For example, the statistical discrimination and the inaccurate statistical discrimination models differ about the empirical validity of demographic-based updating in the presence of information frictions.

We use an event-study analysis to measure the impact of race-related events on stock prices. This approach has advantages in terms of timeliness and data availability for evaluating potential changes at firms due to race-related events. Race-related events are unlikely to produce immediate real effects if biased behavior and attitudes of firm managers, workers, customers, and investors do not change immediately. However, stock prices can respond if forward-looking investors expect future changes in cash flows or discount rates due to changing racial attitudes. Moreover, unlike proprietary internal data about operational changes in firms, stock prices are readily available.

The null hypothesis is that race-related events in our sample did not affect stock prices. While these events could change racial attitudes, they might not necessarily affect expectations of firm cash flows or discount rates. For example, some corporate statements in support of increased diversity, equity, and inclusion and against racism have been criticized as "performative allyship" rather than indicating real material changes in corporate behavior.[7] Additionally, although reduced bias is important for society, it is an open question whether such social changes affect firms. Changes inside corporations could be socially important but orthogonal to factors affecting firm valuations, or they may be zero-NPV if the financial costs offset the financial benefits.

To avoid any misunderstanding, we clarify limitations of this paper. First, we do not test for systemic racism. Our focus is on expected impacts of changing racial attitudes on firms as viewed through stock prices, since actual changes at firms may take years to materialize and be observable. Second, the effects of race-related events on firm valuations are not ethically normative. Higher or lower stock prices or return volatility in response to race-related events are not good or bad per se.[8] Rather, changes in stock prices are evidence that investors expect race-related events will impact firms. Third, we are not commenting on important legal issues about policing or on culpability in specific cases. Rather, policing and legal events are in our sample as occasions that could affect the ongoing racial dynamics in the United States.

[7]See "Performative Allyship: What Are The Signs And Why Leaders Get Exposed," *Forbes*, November 26, 2020.

[8]For example, reducing inefficiencies and informational costs due to bias could raise stock prices. On the other hand, reducing unfair structural advantages due to depressed competition or profitable but unfair labor practices could lower stock prices for affected firms.

3 Race-related events

Racial attitudes in the United States have evolved substantially over the past decade. As measures of this evolution, Figure 1 shows responses to race-related survey questions in the American Trends Panel at the Pew Research Center. The responses indicate increasingly positive views of a more diverse society (Panel A) and growing awareness about racism (Panel B). The changes in survey responses were notably amplified in 2020.

The evolution in racial attitudes in the United States has been closely connected with a series of recent high-profile events connected with race. We study the effects of race-related events in the United States on stock prices over two recent time periods of heightened social attention about race.[9] The first period starts with the murder of George Floyd on May 25, 2020 and ends on August 31, 2020. The end date was selected so as to avoid the 2020 presidential election in which issues about race were potentially conflated with other non-race political issues. As we document below, this was a period of intense social awareness about race and bias on multiple dimensions. We also consider an extended sample period from January 1, 2014 to August 31, 2020.[10] The extended sample starts near the beginning of the Black Lives Matter movement. In Figure 2, Panel A plots Black Lives Matter protests as an indicator of public attention to race over time. While our sample of race-related events extends beyond Black Lives Matter protests, the accelerated frequency of protests indicates that the pace of activity increased substantially following the murder of George Floyd on May 25, 2020. We compare the two samples to evaluate if there is a significant difference in the impact of race-related events on stock prices, which could suggest changes in attitudes and responses towards race in mid-2020.

Our sample of race-related events is constructed in four steps. First, we compile a list

[9]We focus on recent race-related events, rather than using a longer historical sample period, because the current legal environment and baseline social attitudes regarding race and bias are different, at least to some extent, from the 1960s Civil Rights and earlier Jim Crow periods.

[10]The Black Lives Matter organization was founded in response to the death of Trayvon Martin in 2012 and the subsequent acquittal of George Zimmerman. The first Black Lives Matter protests were in the summer of 2014 following the death of Eric Garner. Over the past eight years, it is estimated there have been over 6,000 Black Lives Matter linked protests (see `https://elephrame.com/charts/BLM`). Participation in these protests has been extensive, with an estimated 6% to 10% of the U.S. population participating in a protest. This makes the Black Lives Matter movement one of the largest protest movements in American history (see "Black Lives Matter May Be the Largest Movement in U.S. History," *New York Times*, July 3, 2020).

of topical terminology connected with major stories about race.[11] Second, we search for articles in the Wall Street Journal (WSJ) that use terms in our vocabulary list. Events in our analysis are dated relative to print publication dates in the WSJ. Using the WSJ (rather than local newspapers) is consistent with news events being visible to investors. We searched for articles only in Section A of the WSJ to focus on salient events that were material innovations to the information set of investors.[12] This search identified 894 WSJ stories using potentially race-related vocabulary. Third, we apply a rubric that eliminates WSJ articles about international events, domestic events unrelated to bias against Black people, opinion and commentary articles, ongoing race-related trends over time not connected to specific events,[13] duplicate articles about the same event on the same day, and events that were insufficiently material.[14] Thus, our event identification rubric is based on transparent and objective criteria. This rubric identified 30 articles about major events on 22 trading days starting May 25, 2020 that were material innovations to the information set of investors. Of the 30 major events, four are related to the legal system, 13 are connected to protests, and 13 are about institutional, including the government, stances related to race. In the extended

[11]The search terms are: Ahmaud Arbery, Anthony Lamar Smith, Black Lives Matter, Breonna Taylor, confederate flags, demonstrations, Dylann Roof, Eric Garner, Freddie Gray, George Floyd, Michael Brown, monuments, protests, racism, Rayshard Brooks, statues, taking the knee, Trayvon Martin, or white supremacy. For articles containing the terms demonstration or protest, we require at least one of the following additional subject terms: activism, activists, police, police brutality, political racism, violence, or white supremacists (to identify race-related demonstrations and protests), and omit articles with the following subject terms: consular services, diplomatic services, international relations, or sanctions (which denoted protests taking place outside of the United States).

[12]Requiring Section A reporting in the WSJ also ensures against a lookback bias. What matters in an event study are events that were viewed contemporaneously as material innovations. For example, the death of Breonna Taylor is not included in the sample but later protests about her are included as the contemporaneous understanding of her death grew in importance. In addition, many later Black Lives Matter protests were not information shocks once such protests became more common and, thus, predictable.

[13]Commentary articles about perceived trends over time are eliminated. Market responses to ongoing trends occur over time as the trends are recognized by investors, which may not be on the date of the article.

[14]The rubric eliminated 263 stories about international news (e.g., demonstrations in other countries), 195 domestic stories unrelated to bias concerning Black people (e.g., immigration protests, political races, Native American issues), 161 articles that were either non-news commentary and opinions or reporting about ongoing trends over time rather than temporally localized events (e.g., changing systematic patterns in policing in multiple jurisdictions), 7 duplicative articles, 85 articles about events that appeared insufficiently consequential (e.g., short notices about promotion of a Black general, Starbucks Black Lives Matter t-shirts, phone apps used by demonstrators, and local politics), and 100 stories about minor incremental developments in ongoing major race-related stories. The latter included short notices about intermediate steps in race-related legal processes (e.g., an accused officer being released on bail and a notice about the first day of a trial) and follow-up reporting about individuals involved in earlier major events (e.g., a prosecutor being fired later in his career).

sample starting on January 1, 2014, there are 83 articles on 70 trading days.[15] Of the 83 events in the extended sample, 27 are connected to the legal system, 23 are about protests, 28 are about institutional stances related to race, and five are coverage of racial violence. Some of the race-related events in our study involve deaths of Black individuals. These deaths are tragic. However, they are included in our sample because of their significance in the national reexamination of racial bias.

The directional effects of various race-related events may differ. In the fourth step of our sample construction, events are classified as either social-change or status-quo events. A social-change event is defined as reducing bias and improving racial attitudes. A status-quo event is defined as maintaining, or possibly increasing, bias and reinforcing racial attitudes. The directional classification is based on an explicit rubric to identify the proximate effect of events. The criteria in the rubric are in Appendix A.[16] Thus, our event classification is also based on transparent and objective criteria. Some specific examples illustrate our approach: The legal charges on June 4, 2020 for the police officers involved in the murder of George Floyd is classified as social change since it increased legal accountability for racial violence. Federal agents being sent to Portland on July 18, 2020 due to ongoing protests is classified as status quo because of negative media coverage about violence in the Portland protests.

Our event classification allows us to study whether there is a differential response to social-change and status-quo events. One difficulty is that proximate effects are noisy signals of contemporaneous beliefs about the ultimate effects of events, which are arguably what should affect stock prices. Unfortunately, ultimate effects and whether they were anticipated are difficult to identify. In particular, events with regressive proximate effects sometimes have progressive ultimate effects if they lead to predictable stronger counterreactions in the future

[15]Our extended sample include events connected with the deaths of Michael Brown, Eric Garner, Trayvon Martin, Anthony Lamar Smith, Ahmaud Arbery, Breonna Taylor, and George Floyd; the Emanuel African Methodist Episcopal Church shooting; major Black Lives Matter protests (that occurred early in time before protests became more predictable or that attracted substantial media coverage), news about confederate monuments and the confederate flag; and race-related protests by athletes.

[16]To ensure consistency with this rubric, the two authors reviewed events independently. In addition, a research assistant reviewed our event classifications and verified the rubric was applied consistently in classifying events.

(and vice versa).[17] Notwithstanding this limitation, our proximate classification provides information about the directionality of race-related events.

Our sample of 22 race-related event days on or after May 25, 2020 comprises 13 days with social-change events, seven with status-quo events, one day with both a social-change event and a status-quo event, and one day with an event classified as ambiguous. When the sample is extended to the longer sample period starting on January 1, 2014, there are 70 days with major race-related events of which 47 days are classified as having progressive social-change events, 19 days have regressive status-quo events, two days have both a social-change event and a status-quo event, and two days have events classified as ambiguous in terms of their proximate impact.[18] Panel B in Figure 2 plots the classified race-related events over time. There is again clustering of race-related events and a clear increase in reporting about race-related news in the later sample period starting May 25, 2020.

4 Data

We use data on individual U.S equities to study returns and volume on days with race-related events. The sample consists of all public firms from CRSP located in the United States with ordinary common shares listed on the NYSE, NASDAQ, and AMEX exchanges. This comprises 3,566 stocks in the sample from May 25, 2020 to August 31, 2020, and 5,112 stocks in the extended sample. The Fama-French three-factor model is used to construct daily abnormal returns by controlling for the market, size, and value factors. The market excess return, SMB size, and HML value factors are from Ken French's data library.[19] Factor loadings are estimated for each stock in our sample over a window from 250 to 30 trading

[17] This was a common dynamic, for example, in the 1960s Civil Rights movement. An example from the 1960s may clarify the idea: The 16th Street Baptist Church bombing in Birmingham, Alabama, on Sunday, September 15, 1963 was a tragic event. Its proximate effect was regressive. However, public outrage over the event marked a turning point in the Civil Rights Movement, so its ultimate impact was progressive. More recently, in our sample, a similar dynamic appears in the regressive proximate intent behind the Emanuel African Methodist Episcopal Church shooting on June 17, 2015 in Charleston, South Carolina and the eventual progressive political decision by South Carolina to remove the Confederate flag.

[18] An ambiguous event is, for example, an acquittal of a law-enforcement official (status quo) that is accompanied by demonstrations (social change). Ambiguous events are included in the empirical analyses studying days with race-related events, but they are omitted when examining classified events.

[19] See `https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html`.

days prior to May 25, 2020.[20] This estimation-window timing is the same as Acemoglu, Hassan, and Tahoun (2018) and is similar to standard event-study methodology in which abnormal returns are out-of-sample with respect to the estimated parameters of the return model (i.e., the fitted Fama-French model).

We construct two measures of a firm's responsiveness to social pressure. As a proxy for the receptivity of a firm's owners to social pressure, we use firm-level institutional ownership from Refinitiv. As a measure of monitoring and the strength of firms' revealed preferences for their existing diversity policies, we use the governance pillar of a firm's ESG score from Refinitiv.

We form three market-position characteristics for firms. First, we use Compustat segments to measure a firm's international sales. Second, we measure firm size using the book value of assets from Compustat. Third, we assess a firm's sales proximity to retail consumers (vs. intermediate-good producers) based on a downstreamness measure developed by Antràs et al. (2012). This approach uses Input-Output connections from the U.S. Bureau of Economic Analysis to determine a firm's position in production processes.

We also construct several measures of a firm's social engagement and diversity characteristics. First, we use the social pillar of a firm's ESG scores from Refinitiv. Second, we measure the volume of public discussion about race by the general population and specifically by corporations on social media using tweet data from Twitter, which is currently called "X."[21] Third, we proxy for firm managerial diversity by the share of senior Black managers scaled by all employees for a firm's industry, where an industry is defined using three-digit NAICS codes, which is the most granular data available. The data are from the U.S. Equal Employment Opportunity Commission (EEOC). We use the latest data available for 2018. Industry proxies are necessary because firm-level managerial demographic data are not public. Fourth, we construct a measure of employee racial-discrimination complaints filed with the EEOC using data from a Freedom of Information Act (FOIA) request, which publicly released anonymized employee complaints from 2011 to 2017.[22] We match complaints in the

[20]For the extended sample from January 1, 2014 to August 31, 2020, we estimate factor loadings using a rolling window of [-250, -30] trading days for each quarter.

[21]See `https://twitter.com` and the Python package `Twint`.

[22]See `https://github.com/PublicI/employment-discrimination`.

last year available to firms in our sample using a firm's industry based on its six-digit NAICS code and firm size based on categories in the EEOC data for private employers. Industry and size matches are used because firm-level data are unavailable.

Table 1 provides summary statistics for event, return, and volume variables in Panel A and for firm characteristics in Panel B. Panel C provides correlations between the firm characteristics.

5 Empirical design

We study the effects of race-related events on stock prices using the following specifications:

$$Y_{i,t} = a_0 + a_1 Race\text{-}related\, Event_t + Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$Y_{i,t} = b_0 + b_1 Social\, Change_t + b_2 Status\, Quo_t + Controls_{i,t} + \varepsilon_{i,t}, \quad (2)$$

where the dependent variable $Y_{i,t}$ is the daily Fama-French three-factor absolute abnormal returns for firm i on trading day t ($|AR_{i,t}|$), trading volume ($Volume_{i,t}$), or daily Fama-French three-factor abnormal returns ($AR_{i,t}$).[23] Absolute abnormal returns and volume measure the arrival of valuation-relevant information, while signed abnormal returns measure directional information. We use a Poisson model when the outcome is volume because it is a count variable (Cohn, Liu, and Wardlaw (2022)).[24] The explanatory variables of interest are $Race\text{-}related\, Event_t$, $Social\, Change_t$, and $Status\, Quo_t$. These are indicators equal to one on the WSJ publication date and also on the pre-publication date (i.e., the trading day before) for race-related events, social-change events, and status-quo events, respectively. Firm fixed effects are included in absolute abnormal return and volume regressions to absorb time-invariant cross-sectional differences in firm volatility and trading volume.[25]

There are two potential concerns about correlation in the error term. First, there might

[23] Our research approach builds on methods for event-study analysis of common, rather than firm-specific, events (see, e.g., Frank and Sanati (2018) and Cieslak, Morse, and Vissing-Jorgensen (2019)). Accordingly, we use a panel regression.

[24] For specifications using a Possion model, the corresponding table reports the pseudo-R^2.

[25] Firm fixed effects are not included in the signed abnormal return regressions because Fama-French abnormal returns are net of firm-specific intercepts.

be correlation across firms on a particular date. Second, there might also be correlation within a firm across trading days. The baseline specification clusters standard errors by industry-trading day to account for correlation across firms within industries on a particular day in a parsimonious approach. We also provide results for two alternative approaches to clustering standard errors. One alternative clusters standard errors by trading day and industry-week. This allows the error term to be correlated across all firms on a particular date and for the error term to be correlated across firms in a particular industry over a week. A second alternative is Newey-West standard errors that accounts for autocorrelation in each individual firm's error term.

The hypothesis that race-related events affected stock prices implies that the coefficients a_1, b_1, and b_2 are significantly different from zero. In other words, we test whether daily volatility, volume, and returns differ on race-related event days relative to other days in the sample period. In an extension, Section 7 interacts the $Race\text{-}related\,Event_t$, $Social\,Change_t$, and $Status\,Quo_t$ indicator variables with firm characteristics relating to ownership, governance, market position, social engagement, and diversity. These characteristics allow us to study specific economic channels through which race-related events might impact firms' stock returns.

The empirical models in (1) and (2) are most naturally interpreted with causality running from race-related events to returns and volume. In particular, acts of violence, legal outcomes, demonstrations, and other race-related events are unlikely to be responses to stock-price changes and volume. Furthermore, in our interaction specifications, the firm characteristics are predetermined before the events in our sample (except for corporate tweeting as discussed in Section 7.3).

The interpretation of mean returns in event studies differs depending on whether the event timing is predictable. For predictable events (e.g., earning announcements), average returns estimate risk premia compensating for predictable risk exposures. In contrast, when the timing of events is unpredictable, like the race-related events we study, the event study estimates "attribution moments" conditional on the occurrence of the events. In other words, models (1) and (2) for abnormal returns do not estimate ex-ante alphas for race-related risk or for a race-related factor. Rather, they estimate the ex-post conditional variability and

means of price responses given an event. The results for volume, another ex-post measure of information arrival, are similar.

One measurement challenge in our research design is that the ongoing racial dynamics in the United States have not involved decisive events equivalent to, for example, corporate takeover announcements. Rather, racial dynamics occur through a series of race-related events that incrementally change racial attitudes. In Section 6, we find these incremental events significantly impacted stock valuations. However, the size of the price effect of any single incremental event is smaller (measured in basis points) than for a corporate takeover (measured in percentage points). The average per-event effects can be multiplied by the number of event days to estimate cumulative valuation impacts.

6 Valuation effects

We begin our analysis using panel regressions for the cross-section of publicly-traded firms to evaluate whether returns and volume on days with race-related events differ from returns and volume on other days. The analyses in this section investigates the sample period following the murder of George Floyd from May 25, 2020 to August 31, 2020.[26]

6.1 Firm responses

This section presents our baseline results about firms' stock-price and volume responses to race-related events.[27] The daily abnormal returns represent stock valuation effects after removing standard systematic sources of variability in the Fama-French factors (e.g., due to macro news, effects of the Covid pandemic) and the firm-specific Fama-French intercepts (i.e., alphas). Table 2 reports results for daily absolute abnormal returns and volume (as an unsigned measure of valuation-relevant information arrival) and for daily abnormal returns (as a measure of directional information). We find evidence of both information arrival and of directional information impacts due to race-related events.

[26]This period only has 69 trading days, which is insufficient for investigating aggregate index effects. In contrast, the panel regressions have 3,566 firms to study the effect at the firm level.

[27]This analysis is related to the event study approach at the firm level in the political economy and finance literature (Akey (2015) and Brogaard, Denes, and Duchin (2021)).

In Panel A, columns 1 and 2 present results for panel regressions of daily absolute abnormal returns. This analysis tests whether valuation-relevant information arrives on days with race-related events measured using absolute abnormal returns. We find strong evidence of greater information arrival on race-related event days. Column 1 shows that daily absolute abnormal returns are 35.7 basis points larger on days with race-related events. Column 2 reports that both social-change and status-quo events have significant valuation-relevant information.[28] Columns 3 and 4 show the estimates using volume. There is a 23.5% increase in volume on race-related events days.[29] Volume rises on both social-change and status-quo events days. The effects across all specifications are statistically significant at the 1% level. The estimated magnitudes are also economically meaningful, representing a 7.6% to 43.3% increase relative to the corresponding estimates for firm earnings announcements reported in Table A3 of the Internet Appendix. This suggests that increased valuation-relevant information arrives on days with race-related events.

Given that race-related events are associated with the arrival of valuation-relevant information, the next question is about directional impact. Panel B presents results from panel regressions of daily abnormal returns on race-related variables. Column 1 shows firms had, on average, positive net abnormal returns of 16.3 basis points across all days with race-related events. With 34 publication and pre-publication days for the 22 days with race-related events, the estimated cumulative economic magnitude is $34 \times 0.163 = 5.5\%$ over the period from May 25, 2020 to August 31, 2020. This net valuation effect can be decomposed, using our event classifications, into separate effects for social-change and status-quo events. Column 2 shows that abnormal returns are 28.2 basis points higher on social-change event days, but there is no statistically significant change on status-quo event days. This is consistent with lower information innovations for status-quo events, which generally reinforce continuity, relative to social-change events. The cumulative directional return is 6.2% on average for social-change events.[30] These results indicate that stock prices responded to

[28]The estimates for the classified events are below the coefficient on race-related events in column 1 because an event day can contain both a social-change and a status-quo event.

[29]When we use the Poisson model, we report the exponentiated coefficient minus one in the text. The tables contain the raw coefficients. Thus, the estimated coefficient of 0.211 corresponds to a 23.5% increase in volume.

[30]Since there are 22 pre-publication and publication days for 13 social-change event days, then 22 days $\times$ $0.282 = 6.2\%$.

race-related events, particularly to social-change events. They also illustrate an important interpretive point: The coefficients for social-change and status-quo events in column 4 measure the effects of particular types of events, whereas the coefficient on race-related events in column 3 is the overall net impact of both social-change and status-quo events over the sample period.[31]

Figure 3 shows average cumulative abnormal returns for a longer window after race-related events. We focus on a relatively short pre- and post-event window since events often occur close to each other. Panel A shows the cumulative abnormal returns separately for social-change and status-quo events, and Panel B shows the difference between cumulative abnormal returns for the two types of events. The return effects appear to be different and the difference is persistent for the two types of classified events. The Internet Appendix includes a formal analysis of persistence by reestimating the regressions in Table 2 using a five-day (rather than two-day) event window where the variables $Race\text{-}related\,Event_t$, $Social\,Change_t$, and $Status\,Quo_t$ are modified to equal one on the pre-publication date and the four following days. This allows for lagged effects. Table A1 in the Internet Appendix reports similar results to those in Table 2 except for absolute abnormal returns and volume for status-quo events.

There are several explanations for the low R^2 statistics in the abnormal return regressions in Panel B of Table 2 (and in later sections). First, the dependent variable in the regressions are Fama-French abnormal returns. Accordingly, explanatory power for the Fama-French factors has already been removed. Second, the only explanatory variables in the abnormal return regressions are indicator variables for race-related event days.[32] In other words, these regressions investigate how event days differ on average from non-event days. Since R^2s here measure the asset pricing explanatory power of race-related events, they are mechanically low given the relatively low number of major race-related events. In particular,

[31]The sign of the coefficient on unclassified events in the abnormal-return panel regression (in column 3) depends on both the magnitudes of the conditional impacts of social-change and status-quo events (the intensive margin) and on the relative number of the two types of events (the extensive margin). As a result, possible missing events can bias the net impact up or down depending on whether the missing events are social-change or status-quo events, whereas missing events only reduce estimation accuracy but do not bias the estimates of the classified event impacts.

[32]There are no firm fixed effects in these regressions because abnormal returns are net of firm-specific intercepts.

the R^2s will be smaller mechanically given that there are 34 trading days associated with race-related events out of 69 total days in the sample starting May 25, 2020. Third, abnormal returns include the valuation effects of general firm news in addition to the impact of race-related events, which reduces the R^2 in our empirical setting. As a back-of-the-envelope illustration, if race-related events account for 10% of abnormal return variance, then the maximal R^2 is on the order of only 5% (or 0.05).[33] Thus, an R^2 of 0.1% (0.001) is actually non-trivial for an event-study panel regression. However, the estimates show that race-related events have statistically significant effects on stock prices, which are economically meaningful and plausible.

6.2 Robustness

This section provides robustness analyses of our baseline results along several dimensions. Specifically, we consider robustness to standard errors, other events, price-measurement issues for low-price and low-volume stocks, and alternative factor-loading estimates. Our analysis finds that our baseline results are robust.

One potential concern is about the standard errors and possible correlation in the error term that differs from the baseline specification of within an industry on a particular trading day. Table A2 examines robustness using two alternative approaches for estimating standard errors. Panel A provides results with standard errors that are clustered by trading day and industry-week. This allows the error terms to be correlated across all firms on a particular date and to be correlated across firms in a particular industry over a week. Our results remain statistically significant at conventional levels, though they somewhat attenuate, and are no longer significant for absolute abnormal returns and volume for status-quo events in columns 2 and 4, respectively. Panel B uses Newey-West standard errors with a five period lag to account for the autocorrelation in a firm's error terms. The statistical significance remains similar to the baseline results.

Another potential concern is that race-related events may coincide with other informa-

[33] If a dependent variable has the same variance σ^2 on 34 event days (i.e., event publication days and days before publication) and 35 non-event days for all firms, then, given the 10% mix of race-related news relative to general news, the upper bound on the R^2 is roughly $\frac{34\,\sigma^2}{34\,\sigma^2+35\,\sigma^2} \times 0.10 \approx 0.0493$.

tion arrival at the same time. To address this concern, we include additional controls in our analysis for firm earnings announcements, Federal Open Market Committee (FOMC) announcements, and Bureau of Labor Statistics (BLS) Employment-Situation announcements. We define $Earnings_{i,t}$ as an indicator variable equaling one on the day of a firm's earnings announcement and on the following day. Indicator variables $FOMC_t$ and BLS_t are defined similarly for FOMC and BLS announcements, respectively, except there is only time-series variation. Since these variables indicate when information is released, but not the direction of the news, we focus on the information-arrival specifications with absolute abnormal returns and volume. Table A3 reports results for the baseline specifications augmented with the *Earnings*, *FOMC*, and *BLS* variables. The estimates for all of the race-related coefficients with the news controls are economically and statistically similar to those in Table 2. Thus, our information-arrival results for race-related events are not confounded by other major firm-level and macroeconomic information arrival.

Price-measurement accuracy is another potential robustness concern. The Internet Appendix provides two additional robustness checks related to price-measurement issues. First, we eliminate firm-trading days on which closing prices are averages of close-of-day bids and asks rather than transaction prices. In Table A4, Panel A shows that we continue to find similar results. Second, we eliminate firm-trading days on which prices are less than \$5, in addition to when closing prices are averages of close-of-day bids and asks. The \$5 filter is often applied to reduce price-discreteness related microstructure effects. We find similar results in Panel B of Table A4.

The measurement of factor-loadings is also a concern. Table A5 presents our baseline findings estimated using abnormal returns computed using two alternate factor-loading estimates. In Panel A, the abnormal returns are computed using factor loadings estimated over the extended-sample period from January 1, 2014 to August 31, 2020. An advantage of the extended-sample factor-loading estimates is that, if factor loadings are stable over time, the longer sample period means factor loadings and abnormal returns are estimated more accurately. In Panel B, abnormal returns are computed using in-sample factor loadings estimated just using data on and after May 25, 2020. An advantage of this approach is that it controls for the possibility that factor loadings could differ during the Covid pandemic

relative to the pre-pandemic period. Comparing results in Table A5 with those in Table 2, where factor loadings are estimated over a $[-250, -30]$ trading day window, shows that the baseline results are robust for the two different loading estimates.

6.3 Heterogeneous responses

Section 6.1 reports results about average firm responses to race-related events. However, firms may respond differently to changing racial attitudes due to cross-sectional variation, such as in firms' ownership, governance, market position, social engagement, and diversity characteristics. We next examine firm heterogeneity in stock-price responses by adding stock-specific coefficients for race-related events in our panel regressions for absolute abnormal returns and abnormal returns. This approach allows the coefficients on $Race\text{-}related\,Event_t$, $Social\,Change_t$, and $Status\,Quo_t$ to differ for each stock. We focus on stock prices for these analyses since the economic mechanisms developed in Section 7 evaluate signed abnormal returns.

Figure 4 plots the distribution of coefficients for each variable truncated for outliers.[34] It shows that there is substantial heterogeneity across firms in their responses to race-related events and to classified events for both absolute abnormal returns and abnormal returns. The dashed vertical line in each panel denotes the average estimated coefficient for the full distribution. The horizontal scale is in percentage points, so the differences across firms are economically meaningful. Additionally, F-tests show that the coefficients across firms are statistically significantly different from each other for each variable at the 5% level or better.[35] There is also further structure in the firm response coefficients. A natural hypothesis is that if social-change events are associated with positive abnormal returns for a given firm, then status-quo events are likely to be associated with negative abnormal returns. We find evidence supporting this hypothesis. The correlation of the firm-level abnormal-return response coefficients for social-change and status-quo events winsorized at the 1% level in each tail is -42.2%, which is significant at the 1% level.

[34] For interpretability, we display the coefficients between -2 and 2 percent for each panel.

[35] The F-test statistics for equality are 1.65 for the specification corresponding to Panel A (p-value = 0.000), 1.05 for Panel B (p-value = 0.016), 1.36 for Panel C (p-value = 0.000), 22.37 for Panel D (p-value = 0.000), 1.07 for Panel E (p-value = 0.001), and 65.50 for Panel F (p-value = 0.000).

We conjecture that heterogeneity in firm-level responses to race-related events is linked to particular firm characteristics. Section 7 considers specific firm characteristics and channels. We present preliminary evidence here based on a firm's industry. Firms in different industries are likely to have collections of characteristics that differ from firms in other industries. Using the Fama-French 12-industry classification, we estimate equation (2) for absolute abnormal returns and abnormal returns using panel data for individual firms in each industry, which allows for different industry responses to social-change and status-quo events. Figure 5 shows the results. For each industry, the dot indicates the estimate for $Social\,Change_t$ or $Status\,Quo_t$. The bars indicate the 95% confidence intervals. Panel A reports results for absolute abnormal returns, and Panel B shows results for abnormal returns. There is substantial heterogeneity in how firms in different industries respond to race-related events. For example, Energy firms and IT firms respond to status-quo events with opposite signs in Panel B and are significantly different using an F-test at the 1% level. Additionally, F-tests show that the coefficients for each variable are significantly different from each other across all industries at the 1% level. Overall, there is substantial heterogeneity across industries in stock-price responses to race-related events.

7 Channels

This section studies economic mechanisms explaining firms' directional stock-price responses to race-related events and their connection with firm characteristics. We begin by examining the role of firm decision-making. A firm's responsiveness to social pressure might depend on its ownership and monitoring. We present evidence that the effects of race-related events are significantly amplified for firms with high retail ownership (Section 7.1). Next, we examine the role of a firm's market position. We document that abnormal returns at firms with high retail ownership are larger at firms operating primarily in the U.S. and at smaller firms (Section 7.2). We also evaluate the effects of a firm's social engagement and diversity. We show that, again for firms with high retail ownership, the abnormal return response to race-related events is greater at firms that are less progressive on social issues and diversity (Section 7.3). Lastly, we use a LASSO analysis to investigate the relative importance of

all variables studied in this section. Overall, our results highlight that a firm's ownership structure together with its market position, social engagement, and diversity play roles in its responsiveness to race-related events.

The regression analyses in this section extend equation (2) to allow abnormal returns to differ with specific firm characteristics. Since valuation effects are different for social-change and status-quo events, we use the following specification:

$$\begin{aligned} AR_{i,t} &= c_0 + c_1 Social\,Change_t + c_2 Social\,Change_t \times Characteristic_i \\ &\quad + c_3 Status\,Quo_t + c_4 Status\,Quo_t \times Characteristic_i \\ &\quad + c_5 Characteristic_i + \varepsilon_{i,t}, \end{aligned} \tag{3}$$

where the dependent variable is the abnormal returns ($AR_{i,t}$) for firm i on trading day t. The sample period for this section's analyses is May 25, 2020 to August 31, 2020 as in Section 6. Firm characteristics ($Characteristic_i$) are measured before this sample period and described in Section 4. We include the level term in all regressions, but we do not report them in the tables for brevity. The relatively low correlations of firm characteristics in Panel C of Table 1 indicate that they capture different aspects of firms. Standard errors are clustered by industry-trading day.

We study several hypotheses about the mechanisms for how firm characteristics relate to stock-price responses to race-related events using the coefficients c_2 and c_4 in equation (3). The hypotheses are the following:

- The *receptiveness* hypothesis predicts that the response to race-related events is amplified at firms whose decision-making is relatively more receptive to social pressure. We study external pressure from a firm's owners and internal pressure related to its corporate governance. This hypothesis is consistent with social pressure affecting the future decisions of firms.

- The *well-positioned firm* hypothesis predicts that social-change (status-quo) events are better (worse) news for firms that are more engaged on social issues and have more diversity relative to other firms. More progressive firms might benefit from operating

in a less biased world in which social pressure reduces explicit and implicit bias.

- The *costly bias* hypothesis predicts that social-change (status-quo) events are better (worse) news for firms that are less engaged on social issues and have less diversity relative to other firms. The potential economic gains from reduced costly explicit and implicit bias might be greater at firms that are relatively worse in terms of race and diversity. Social pressure that reduces costly bias is better news for less progressive firms than for more progressive firms whose stock prices already incorporate the benefits of lower bias.

- The *woke capitalism* hypothesis predicts that social pressure from social-change events induces progressive firms to pursue activities inconsistent with value maximization. Accordingly, this will negatively impact their stock valuations. This hypothesis predicts that abnormal returns are negative for social-change events at more progressive firms.

- The *learning* hypothesis predicts that race-related events affect stock prices through informational updating about expected cash flows due to investors' learning about a firm's existing race-related characteristics and their cash-flow implications. For example, Balakrishnan et al. (2023) show evidence that investors updated their beliefs about firms' existing race-related risk exposures from corporate disclosures after the murder of George Floyd. This hypothesis predicts that stock-price responses to race-related events should not depend on firm decision-making since there is no impact on a firm's real activities. This prediction is an interpretation of the null hypothesis relative to the first four hypotheses, which operate through real effects of race-related events.

7.1 Firm decision-making

We start our channel analyses by studying the role of a firm's decision-making in the stock-price response to race-related events. We analyze two measures of firm decision-making: ownership and monitoring. First, we define $High\,Retail\,Own$ as an indicator variable equal to one for firms with above median retail ownership.[36] This captures substantial variation

[36]We measure retail ownership as one minus institutional ownership.

in retail ownership. Retail ownership is 35.1% on average at firms above the median, but only 4.4% on average at firms with less than or equal to median retail ownership. Note that this variable is measured prior to the sample period, proxying for pre-existing heterogeneity in ownership structures and potentially preferences related to social issues. It does not measure order flow by investor type when the events occur. Second, we examine the role of corporate governance. We define $Low\,Corp\,Gov$ as an indicator variable equal to one if a firm's governance score from Refinitiv is below median in the year before the sample period. The sample size varies throughout this section based on data availability.

Table 3 presents results on firm decision-making. Column 1 evaluates the role of ownership. Abnormal returns at firms with high retail ownership are 35 basis points higher for social-change events and 14.9 basis points lower for status-quo events. This suggests that a firm's ownership structure plays a role in its response to race-related events. In particular, firms with higher retail ownership are more likely to respond to social pressure from race-related events. Next, we examine the importance of monitoring, as measured by corporate governance. Low governance may also indicate a stronger revealed preference by management of their firm's current diversity policies (i.e., since low governance indicates reduced influence by shareholders on firm policies). Column 2 shows that abnormal returns are 8.9 basis points higher at firms with low corporate governance for social-change events, and 16.7 basis points lower for status-quo events. Column 3 includes ownership and monitoring measures in the same specification. We find that ownership drives more of the responsiveness of firms to race-related events. Abnormal returns are larger at firms with high retail ownership on social-change events days, while there is no longer an effect for firms with low corporate governance on these days. Firms with high retail ownership and also those with low corporate governance have lower abnormal returns on status-quo event days.

Taken together, the evidence in this section is consistent with the receptiveness hypothesis. In particular, it indicates the importance of firm ownership in the responsiveness to race-related events. It is also suggests that there are expected potential real effects due to race-related events at firms whose decision-making is more receptive to social pressure. Accordingly, these findings are inconsistent with the learning hypothesis.

7.2 Market position

A firm's market position may play a role in the valuation effects of race-related events. We investigate three measures of a firm's market position. First, we define $No\,Intl\,Sales$ as an indicator variable equal to one if a firm does not have any international customers that represent at least 10% of its annual sales. We use 10% because this is the reporting threshold for Compustat segments. Firms with more of their business activities based in the United States might be more impacted by race-related events and their attendant effects on bias in the United States. Second, we define $Low\,Firm\,Size$ as an indicator variable equal to one if a firm has below-median book value of assets. Smaller firms might have less effective existing policies to reduce bias and be more susceptible to change. Third, we construct $Downstream$ as an indicator variable equal to one if a firm has below-median upstreamness (as developed in Antràs et al. (2012)) to explore the effects of a firm's position in the supply chain. Intuitively, this measure captures firms with greater proximity to retail consumers.

Table 4 presents results for a firm's market position. Based on the significant role of ownership documented in Section 7.1, we split the sample by firms with high and low retail ownership. Results in the odd-numbered columns (1, 3, and 5) are estimated for the subset of firms with high retail ownership, and the results in the even-numbered columns (2, 4, and 6) are estimated for the subset of firms with low retail ownership. We first consider firms in terms of the mix of their domestic and international activities. For firms with high retail ownership, column 1 shows that abnormal returns are 25.5 basis points higher for social-change events (24.2 basis points lower for status-quo events) at firms whose activities are primarily based in the United States. In contrast, there is no evidence in column 2 of an effect for these firms with low retail ownership.

We next examine the role of firm size. Column 3 shows that abnormal returns are 37.9 basis points higher for social-change events at relatively smaller firms with high retail ownership. Column 4 reports that the corresponding response for firms with low retail ownership is a significant increase of 15.4 basis points for social-change events, which is comparatively smaller than the estimate for high retail ownership firms. There is also a significant negative impact of status-quo events at relatively smaller firms with low retail

ownership. The last two columns explore possible effects of a firm's proximity to retail customers. While the coefficient is positive in terms of its magnitude for firms with high retail ownership and greater proximity to retail customers, it is not statistically significant.

Overall, our results show that a firm's market position matters for how its valuation responds to race-related events. We find evidence for two characteristics: a firm's share of domestic activities and its size. These are both consistent with race-related events impacting a firm's expected cash flows.

7.3 Social engagement and diversity

Our last set of channel analyses evaluate the role of a firm's social engagement and diversity in its stock-price response to race-related events. Firms with greater social engagement and diversity might be well-positioned when racial attitudes change following race-related events. Conversely, firms with lower social engagement and diversity could have relatively greater potential gains after race-related events that reduce costly bias.

We focus on two measures of social engagement. First, we define *Low Social Score* as an indicator variable equaling one if a firm's social score from Refinitiv is below median in the year before the sample period. Second, we measure a firm's social engagement about race on social media using data from Twitter. A firm's use of social media may be informative about its type with respect to characteristics connected to race. Figure 6 shows the weekly number of firms that tweeted about race and related terms. We consider two sets of race-related vocabulary. Panel A shows the weekly counts of firms that tweeted based on the list of topical terminology we used to identify race-related events as described in Section 3. Most firms in our sample avoid tweeting directly on specific social issues relating to race. One notable exception is following the murder of George Floyd on May 25, 2020 when the number of firms with race-related tweets almost tripled. Panel B provides the weekly counts of firms that tweeted more generic vocabulary focusing on race as a general issue.[37] The plot shows a growing number of firms publicly taking positions on race using this terminology. In contrast

[37]Specifically, we search for "diversity," "inclusion," "equality," "racial," and "justice." The generic terminology is based on the analysis of corporate tweeting in "The Striking Race Gap in Corporate America," *The Washington Post*, December 15, 2021.

to Panel A, there were more weeks earlier in the sample with spikes in corporate tweets using generic terms, but the period after the murder of George Floyd remains the most active time of race-related corporate tweeting. We construct *No Social Media* as an indicator variable equaling one if a firm never tweeted using the broader race-related terminology on or after May 25, 2020.[38]

We also construct two measures of diversity. First, we proxy for managerial diversity as the fraction of senior managers who are Black in a firm's industry using three-digit NAICS codes. Firm-level data are unavailable for managerial demographics. We define *Low Manager Diversity* as an indicator variable equal to one for firms in industries with a below-median fraction of Black senior managers. Second, we examine employee racial-discrimination complaints filed at the EEOC. Since EEOC data on discrimination complaints are only available by industry and firm size, we match firms to complaints based on industry and firm size. We define *High EEOC Complaints* as an indicator variable equal to one if a firm has above-median EEOC complaints.

Table 5 presents the results on social engagement and diversity characteristics. Similar to the analysis in Section 7.2, we again split the sample by retail ownership based on the results in Section 7.1 about firm decision-making. We first examine the role of a firm's social score on stock-price responses to race-related events. For the subset of firms with high retail ownership, column 1 shows that abnormal returns for social-change events are 23.0 basis points higher for firms with low social scores. These results are consistent with the costly bias hypothesis (and inconsistent with the well-positioned firm hypothesis) as the response is larger at firms with low social scores. In contrast, for firms with low retail ownership, column 2 finds that stock prices do not respond at firms with low social scores. We next examine firms' social engagement as proxied with social media. Column 3 reports that, for firms with high retail ownership, abnormal returns for social-change events are 31.9 basis points higher for firms with no engagement on social media about race-related terminology. Column 4 shows that the effect for social-change events remains positive, but attenuates, for firms with low retail ownership. However, the effect is also positive for status-quo events at firms not engaging on social media, which is the first estimate consistent with the well-positioned

[38]We use the response during this period to classify a firm's social engagement.

firm hypothesis.

Next, we consider firms that differ in the extent of managerial diversity and race-related EEOC complaints. For firms with high retail ownership, column 5 finds that abnormal returns for social-change events are 23.9 basis points higher at firms with low manager diversity, which is consistent with the costly bias hypothesis. However, for firms with low retail ownership, we also find evidence consistent with the well-positioned firm hypothesis since there is a positive effect for status-quo events at firms with low manager diversity. Columns 7 and 8 show that abnormal returns are lower for status-quo events at firms with high EEOC complaints (28.6 and 13.6 basis points, respectively), but there is no effect for social-change events. This is consistent with the costly bias hypothesis in that it suggests that race-related events reinforcing the status quo exacerbate labor problems at firms with more racial-discrimination complaints.

In sum, the social engagement and diversity evidence is generally consistent with the receptiveness and costly bias hypotheses. For social-change events, abnormal returns are larger at firms with high retail ownership and those with low social scores, no social media presence, and low manager diversity. However, the evidence for status-quo events is mixed. There is evidence for the costly bias hypothesis for firms with high retail ownership and high EEOC complaints, yet we also find estimates consistent with the well-positioned firm hypothesis at firms with low retail ownership and those not engaging on social media and with low manager diversity. We find no evidence for the woke capitalism hypothesis since the level effect for social-change events is positive for firms with high retail ownership and not significantly different from zero at firms with low retail ownership. Further, the discount rate channel predicts clientele effects from ESG investing reduce the cost of capital at more progressive firms. However, the findings in this section are largely inconsistent with this channel since the positive valuation effects of social-change events are mostly amplified at firms with greater (not less) costly bias.

7.4 Which characteristics matter?: A machine learning approach

The preceding channel results provide evidence that firm characteristics, such as retail ownership, social engagement, diversity, and market position, are associated with the response

in abnormal returns to race-related events. We next assess the relative importance of these variables. Given the number of potential explanatory variables and the relatively short time period, we use machine learning to answer this question.

We estimate a LASSO regression with the following objective function:

$$\min_{\beta_0,\beta_p} \left\{ \sum_{i,t=1}^{N,T} \left(AR_{i,t} - \left(\beta_0 + \sum_{p=1}^{P} \beta_p x_{i,t,p} \right) \right)^2 \right\} \text{ subject to } \sum_{p=1}^{P} |\beta_p| \leq \lambda, \tag{4}$$

where the dependent variable is the abnormal returns ($AR_{i,t}$) for firm i on trading day t. We continue to study the same May 25, 2020 to August 31, 2020 sample period. The set of potential explanatory variables ($x_{i,t,p}$) is: the signed race-related event indicator variables (*Social Change*, *Status Quo*), the firm-characteristic variables (*High Retail Own*, *Low-Corp Gov*, *No Intl Sales*, *Low Firm Size*, *Downstream*, *Low Social Score*, *No Social-Media*, *Low Manager Diversity*, *High EEOC Complaints*) as levels, all pairwise interactions of the event indicators and firm characteristics, and all triple interactions of *High Retail-Own* with the pairwise interactions between the event indicators and firm characteristics. The parameter λ for the LASSO regression is chosen to minimize the mean absolute error by using cross-validation grid search with five folds and three repeats, and then the selected variables are determined.

We begin by estimating a LASSO regression using the full sample to determine the optimal λ and for the variable selection.[39] In Table 6, column 1 provides the results. The firm-characteristic level variables are included as potential variables for the LASSO regression to select, but those selected are not reported for brevity. Several aspects of the results are noteworthy.

First, firm characteristics play an important role in firms' stock-price responses to social-change and status-quo events. There are 14 variables selected by the full-sample LASSO regression involving race-related events and interactions with firm characteristics. Of these, six variables are interactions connected to a firm's market position, including larger domestic sales, small size, and greater proximity to retail customers. We also find that six interactions

[39]We use LASSO regressions to study which variables are selected to assess their relative importance. Accordingly, it is reasonable to use the full sample to determine λ and for the selected variables. This differs from other contexts where there is a holdout or test sample to evaluate out-of-sample performance.

related to a firm's social engagement and diversity are selected. The magnitude of these coefficients suggest that social change and diversity interactions are generally less important than those related to a firm's market position. In contrast to the interaction findings, the level variable *Social Change* is least important based on the magnitude of its coefficient, while the level variable *Status Quo* is not selected.

Second, a firm's ownership is a key determinant in the responsiveness of firms to race-related events. This is consistent with the receptiveness hypothesis and the previous results in Tables 3 to 5. In particular, five of the selected variables are triple interactions including high retail ownership. Of these, the selected ownership interactions are mainly related to a firm's market position. This suggests that ownership plays a larger role when connected to a firm's domestic sales, size, and closeness to retail customers.

Third, many of the selected variables are consistent with the costly bias hypothesis. We find that the variables for social-change events interacted with social engagement on media and low social score are selected. Interactions of status-quo events with social engagement on media and low social score are also selected. For these characteristics, it appears that the role of ownership is relatively less important since the triple interaction variables are not selected except for social-change events and low social score. These results indicate that the effects are amplified at less progressive firms with more to gain from reduced costly bias. However, we also note three selected variables (the interactions of status-quo events with low managerial diversity, low social score, and no social media) are consistent with the well-positioned firm hypothesis.

The stability of LASSO variable selection is assessed following Meinshausen and Bühlmann (2010).[40] This repeated two-step approach starts by drawing 1,000 random subsamples of 50% of our data.[41] For each subsample draw, we determine the optimal λ and then estimate the LASSO regression in equation (4) for the particular subsample to determine which explanatory variables are selected. Table 6 displays the variables that are selected at least 33% of the time in the repeated LASSO analysis. We continue to not report selected firm-characteristic level variables for brevity. Column 2 reports the *Frequency Selected*, which

[40]There is inherent variation in the variables selected by a particular LASSO regression for a particular subsample. This approach has been used previously in the finance literature (Burke et al. (2023)).

[41]We randomly sample firms, rather than trading days, since characteristics are time invariant.

is defined as the frequency (in percent) that a particular variable is selected in 1,000 subsamples. Column 3 reports the *Frequency Positive*, which is defined as the frequency (in percent) of positive coefficients from LASSO regressions that selected the particular variable. Note in this column that the selected variables are consistent across the repeated regressions with 100% of these coefficients being either all positive or all negative.

The frequency a variable is selected (column 2) is highly consistent with the estimated coefficients for the full-sample LASSO regression (column 1). The same variables are selected in the full-sample LASSO regression except for two variables (*Social Change* × *High Retail Own* and *Social Change* × *No Intl Sales*) that are not selected using the full sample and that have relatively low selection frequencies in the repeated analysis. In addition, column 3 shows that the signs of the coefficients from the stability selection are always directionally consistent with the full-sample LASSO coefficients in column 1. For example, the coefficient for social-change events for relatively smaller firms (*Social Change* × *Low Firm Size*) is 5.1 basis points in the full-sample LASSO regression and always positive in the repeated LASSO regressions. Overall, the full-sample LASSO results are robust on random subsamples.

8 Changing racial attitudes and attention

This section studies whether there are changes over time in the impact of race-related events on stock prices and volume. We examine the effect of race-related events over an extended sample period (Section 8.1). We also evaluate the role of attention (Section 8.2).

8.1 Extended sample of race-related events

Our analysis in Section 6 shows that stock prices and trading volume responded to race-related events during the period following the murder of George Floyd on May 25, 2020. However, public attention to issues of race was already elevated before May 25, 2020. This section investigates stock-price and volume responses to race-related events in a longer period beginning in 2014, which was the year of the first Black Lives Matter protest, and also evaluates if the response differs on and after May 25, 2020.

We re-estimate the equations (1) and (2) for the extended sample period from January 1, 2014 to August 31, 2020. We define $Late_t$ as an indicator variable equal to one if a trading date is on or after May 25, 2020. We augment the specification to include $Late_t$ and interact it with the explanatory variables for race-related events, social-change events, and status-quo events. Given the longer sample period, factor loadings are estimated using a rolling $[-250, -30]$ trading-day window for each quarter.

Table 7 provides the results. Column 1 in Panel A shows that absolute abnormal returns are 59.6 basis points higher for race-related events during the late period. Column 2 reports a similar pattern for classified events. Absolute abnormal returns in the later period are 35.7 basis points higher on social-change event days and 40.3 basis points higher on status-quo event days. These estimates are statistically significant at the 1% level. Columns 3 and 4 show similar results for trading volume in the late period. These results suggest that race-related events contained more valuation-relevant information on and after May 25, 2020. The coefficient for $Late_t$ by itself captures the effect of the Covid pandemic on volatility and volume at the end of the sample period.

Next, we examine the directional effects of race-related events on stock prices during the extended period and the change following the murder of George Floyd. In column 5, the response of abnormal returns to race-related events is 18.9 basis points higher on and after May 25, 2020, while there is no effect before this period. Column 6 shows a similar pattern for classified events. Abnormal returns are 41.1 basis points higher on social-change event days and 17.6 basis points lower on status-quo event days in the late time period. These estimates are statistically significant at the 1% level, and the difference between them is also statistically significant at the 1% level.

In sum, the valuation and volume effects of race-related events changed following the murder of George Floyd. The findings provide evidence that these events contain higher valuation-relevant information. We also show that the directional response is concentrated during the late period. These results indicate that the effects of race-related events on firms, as viewed through the lens of stock prices, largely stems from those events on and after May 25, 2020. In the next section, we explore the role of attention.

8.2 Attention

Our sample is constructed to include race-related events that potentially affect racial dynamics in society. However, these events are not necessarily all equally impactful on firms. Our next question is whether the effects of race-related events on stock prices and volume are greater for events that attract more attention. This is related to the literature on attention-based valuation effects. In particular, rational attention implies that if attention is costly, then investors pay attention to the most important news (e.g., Sims (2003), Reis (2006), Woodford (2009), and Van Nieuwerburgh and Veldkamp (2009)).

We measure attention in terms of Twitter activity.[42] In particular, we track the daily number of tweets in the United States that use general race-related terms rather than event-specific terminology.[43] Panel A in Figure 7 plots the daily sums of race-related tweets for general race-related terms during our sample period. The figure shows considerable variation in daily attention to race over time. In particular, race-related attention jumped substantially towards the end of the sample, consistent with our findings about the stock-price response following the murder of George Floyd in Section 8.1. Since there is considerable variation in the use of different race-related tweet terms, Panel B in Figure 7 plots the first principal component for standardized counts of race-related tweets. Comparing Panels A and B, the two measures of attention are similar.

To test for attention effects, we construct $High\,Attention_t$ as an indicator variable equal to one on event days when there are above-mean total tweets defined in Figure 7 on days with a race-related event. We augment equations (1) and (2) by interacting $High\,Attention_t$ with the explanatory variables for race-related events, social-change events, and status-quo events.[44] For the extended sample, we continue to use factor loadings estimated using a

[42] Da, Engelberg, and Gao (2011) show online activity is related to financial attention. Blankespoor, Miller, and White (2014) and Bartov, Faurel, and Mohanram (2018) specifically study Twitter and aspects of attention relating to information processing and market reactions to firm disclosures. Relatedly, Balakrishnan et al. (2023) find high racial attention connected with the murder of George Floyd based on Google searches.

[43] These terms are: #BlackLivesMatter, Black Lives Matter, civil rights, diversity, equality, excessive force, inclusion, justice, police brutality, police shooting, racial, racial profiling, and white privilege. Twitter does not allow tweets to be identified by the national location, but it does provide the geolocation of certain tweets. Accordingly, we track our list of race-related tweets in three circles that cover most of the continental United States.

[44] Since $High\,Attention_t$ is defined using variation on days with race-related events, there is no level term in the regression.

rolling $[-250, -30]$ trading-day window for each quarter.

Panel A in Table 8 reports results for the extended sample starting on January 1, 2014. Column 1 shows that the effect of race-related events on absolute abnormal returns is 61.4 basis points greater on days with high attention. Similarly, column 2 reports that absolute abnormal returns are 51.7 and 38.4 basis points higher when attention is amplified on social-change and status-quo event days, respectively. In column 3, the estimated coefficient of 0.435 corresponds to a 54.5% increase in volume for event days with high attention. Column 4 shows that the volume effects are similar on social-change and status-quo event days. We also estimate the effects on abnormal returns in columns 5 and 6, and find that the impact of race-related events is greater on days with high attention. Specifically, abnormal returns are 10.8 basis points larger for race-related events with high attention. Similarly, on days with high attention, abnormal returns are 26.1 basis points higher for social-change events and 21.6 basis points lower for status-quo events. All of the estimates are statistically significant at the 1% level.

Panel B provides the findings for the late sample period starting on May 25, 2020. Since the sample period changes relative to Panel A, we define the attention variable ($High\ Attention_t$) in Panel B based on events during the late period. Specifically, it is an indicator variable equal to one on event days when total tweets using general race-related terms is above the median daily total tweets for those event days starting on May 25, 2020. In columns 1 and 3, we find that absolute abnormal returns and volume are larger when there is high attention for race-related events on or after May 25, 2020. Column 2 and 4 also continue to show that the effects are greater on classified event days. In column 5, abnormal returns are 31.2 basis points higher for race-related events with high attention. Column 6 finds that the effect of high attention is concentrated on social-change event days.

Taken together, the results in this section link the stock-price and volume responses on days with race-related events to attention. First, the effects in the extended sample are driven by those days with high attention. Second, and related, the effects following the murder of George Floyd are concentrated in race-related events with greater attention. This is consistent with the effects being driven during the late period by those events in this period with higher attention.

9 Conclusion

Social issues about racial inequality and bias have received growing attention around the world. Our analysis provides evidence that evolving racial dynamics in American society affect U.S. corporations and their valuations. We study a period of heightened attention to racial dynamics following the murder of George Floyd on May 25, 2020. We find higher information arrival, measured using absolute abnormal returns and volume, on days with race-related events. We also examine the directional impact and find positive effects both on days with race-related events and specifically on those with social-change events. In an extended sample, we show that the effects mostly stem from the events after the murder of George Floyd and concentrate on days with high attention.

Several economic mechanisms might explain the change in stock prices. We evaluate firm characteristics, including ownership, market position, social engagement, and diversity. Our results indicate that stock-price responses for firms with high retail ownership are amplified at those with less social engagement and lower diversity, in addition to more domestic sales. This is consistent with hypotheses about a firm's receptiveness to social pressure and the expected effects on reduced costly bias. The results suggest that race-related events alter firms' expected cash flows. There is also no evidence that firms pursue activities inconsistent with value maximization or of a discount rate channel. Taken together, we provide the first analysis on how events related to race in American society broadly affect firms using forward-looking stock valuations.

There are many interesting directions for future work on the effects of racial dynamics and other social issues. It remains an open question whether and how the corporate sector will implement real changes in response to recent race-related events. Additionally, it is important to understand whether these events affected racial discrimination within firms. There is also limited evidence about the impact of race-related events on other parts of the economy and governments. We leave these important questions for future research.

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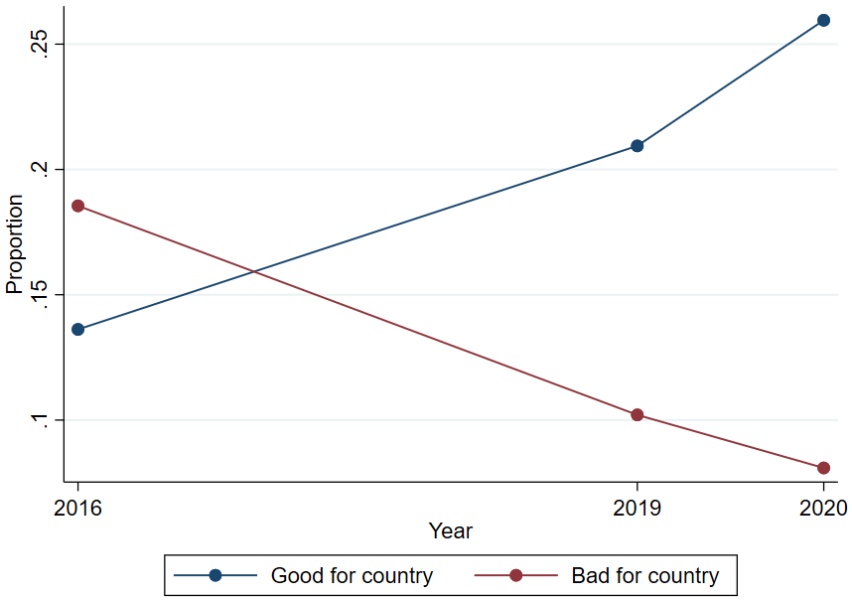
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Figure 1: Racial Attitudes in the United States

This figure shows changes in racial attitudes in the United States. The data are survey responses from the American Trends Panel at the Pew Research Center. Panel A provides survey responses to the question: "According to the U.S. Census Bureau, by the year 2050, a majority of the population will be made up of Blacks, Hispanics, Asians, and other racial minorities. Do you think this will be [Good for the country; Bad for the country; Neither]?" Panel B gives survey responses to the question: "How much of a problem do you think racism is in the country today?"

Panel A: Survey Responses about Diversity



Panel B: Survey Responses about Racism

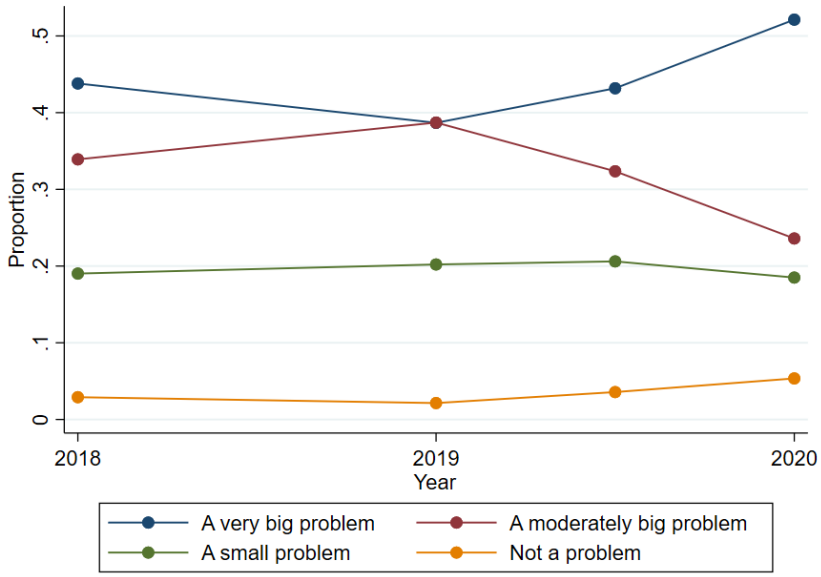
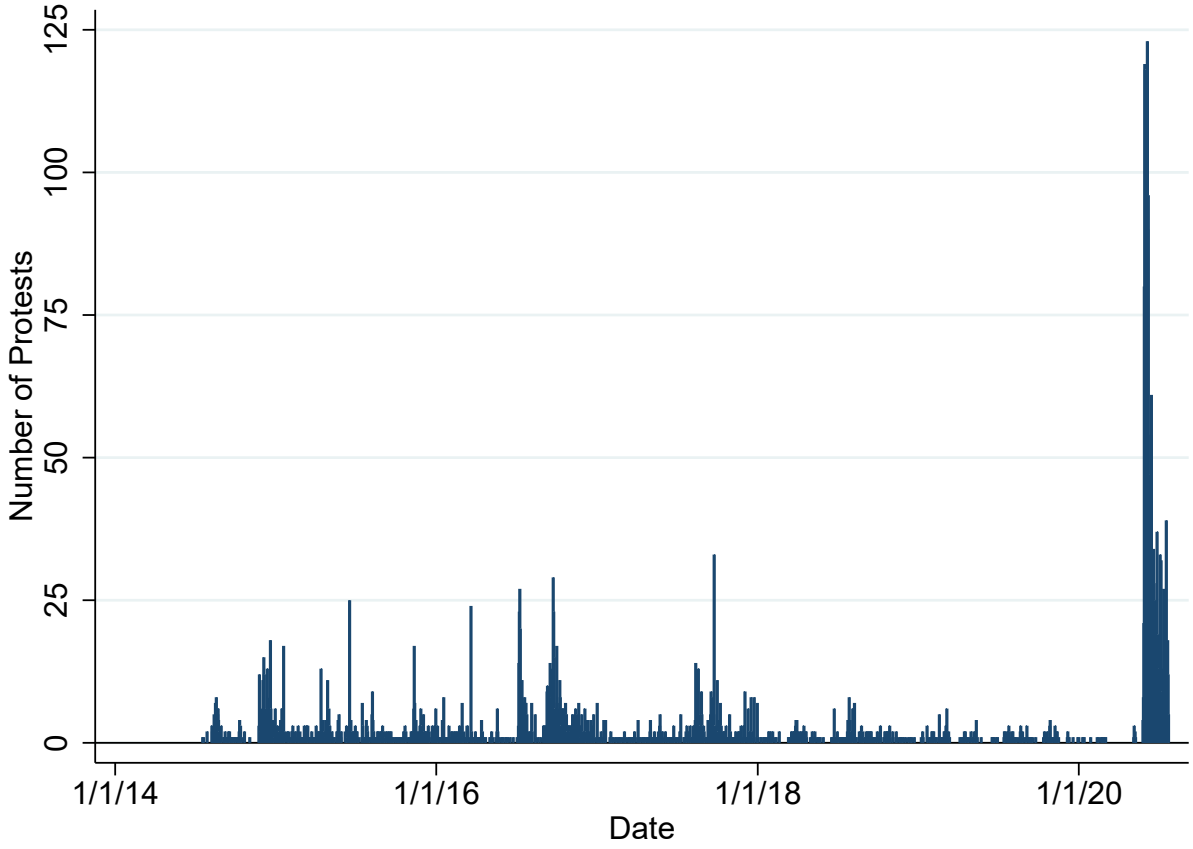


Figure 2: Race-Related Events

This figure shows the frequency of race-related events from January 1, 2014 through August 31, 2020. Panel A shows the daily count of protests supporting Black Lives Matter from July 19, 2014 to July 23, 2020. Data are provided by Elephrame. Panel B shows the type of race-related event based on classifications supporting social change and those for the status quo.

Panel A: Black Lives Matter Protests



Panel B: Type of Race-Related Events

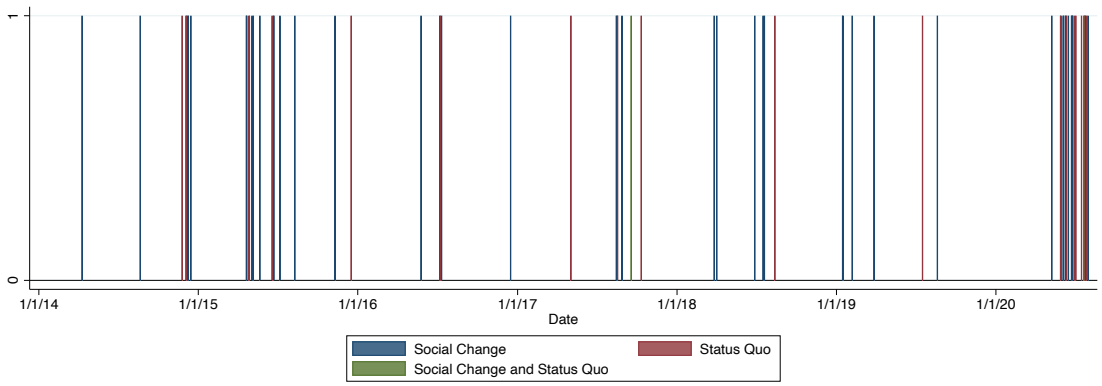
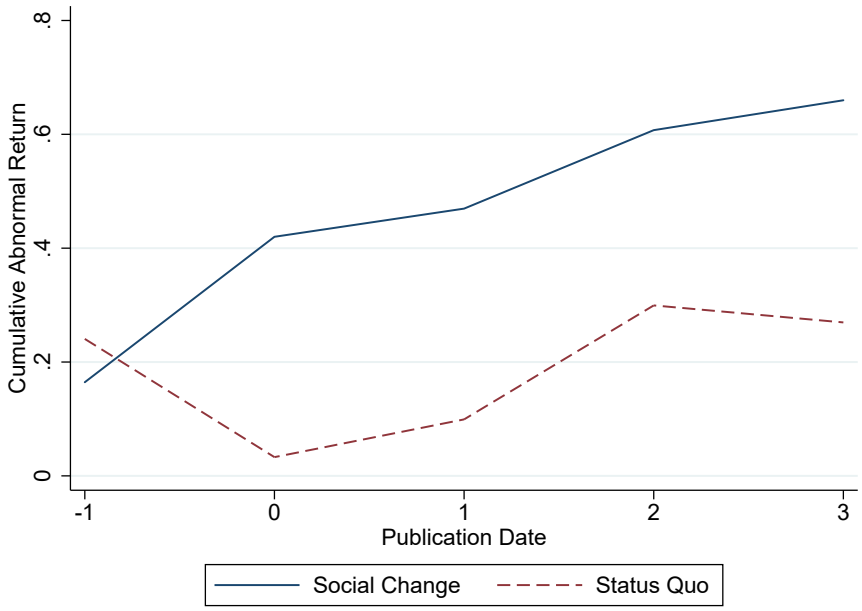


Figure 3: Cumulative Abnormal Returns

This figure displays the cumulative abnormal returns (CARs) for race-related events. In Panel A, the solid line shows the CARs for social-change events, and the dashed line shows the CARs for status-quo events. In Panel B, the line shows the difference in CARs between social-change events and status-quo events. The event window starts one trading day before the publication of an article in the *Wall Street Journal* about a race-related event and ends three trading days afterwards.

Panel A: Social-change and Status-quo Events



Panel B: Difference between Events

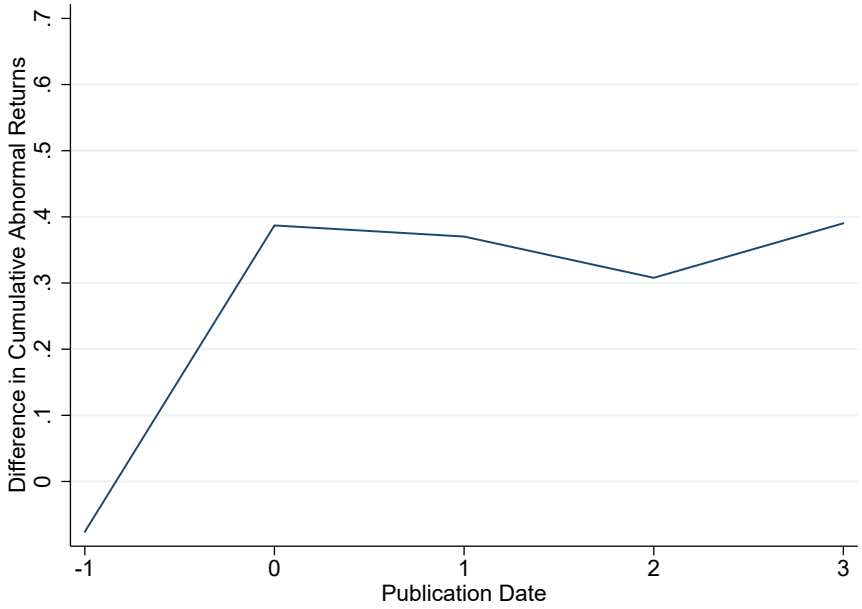
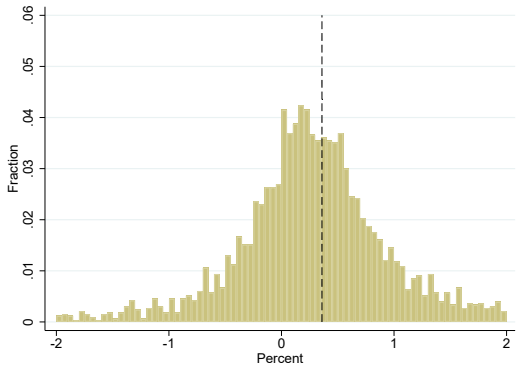


Figure 4: Firm-Level Coefficient Distributions

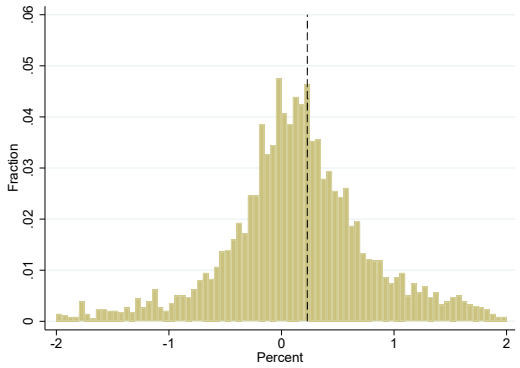
This figure shows the distribution of the coefficients for firm-level responses on trading days with race-related events. Abnormal returns are the residual (in percent) from the Fama-French three-factor model. The sample period for these regressions is on or after May 25, 2020. The dashed vertical line denotes the average estimated coefficient. The displayed figures are truncated for outliers. Panels A and B provide the coefficient distributions for absolute abnormal returns and abnormal returns, respectively. Panels C to F display the analogous distributions for the social-change and status-quo events.

Absolute Abnormal Returns

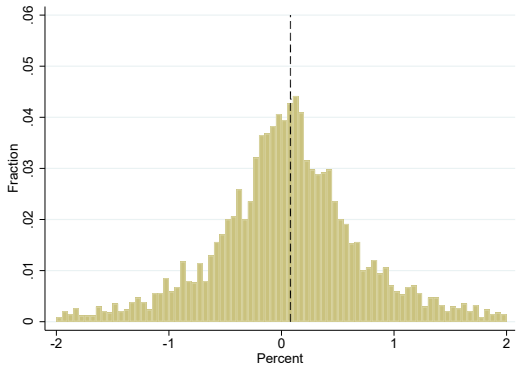
Panel A: Race-related Events



Panel C: Social-change Events

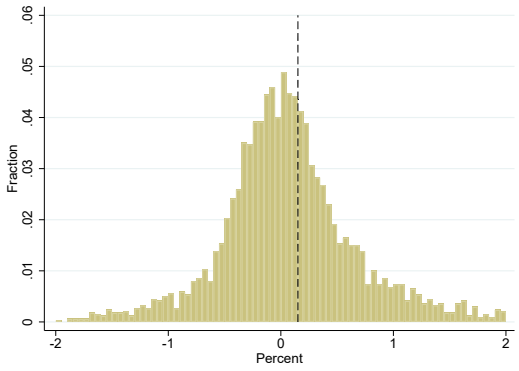


Panel E: Status-quo Events

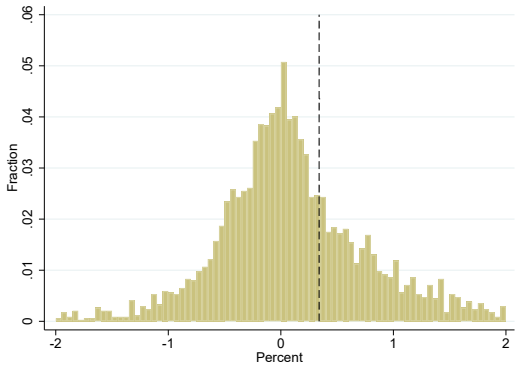


Abnormal Returns

Panel B: Race-related Events



Panel D: Social-change Events



Panel F: Status-quo Events

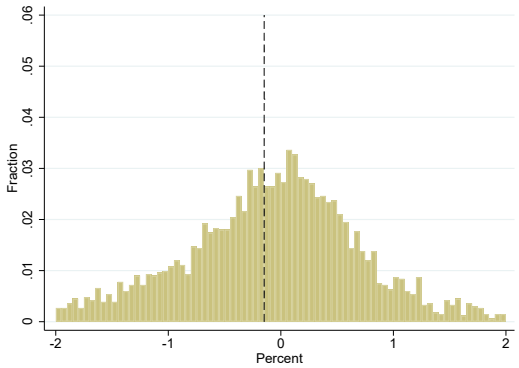
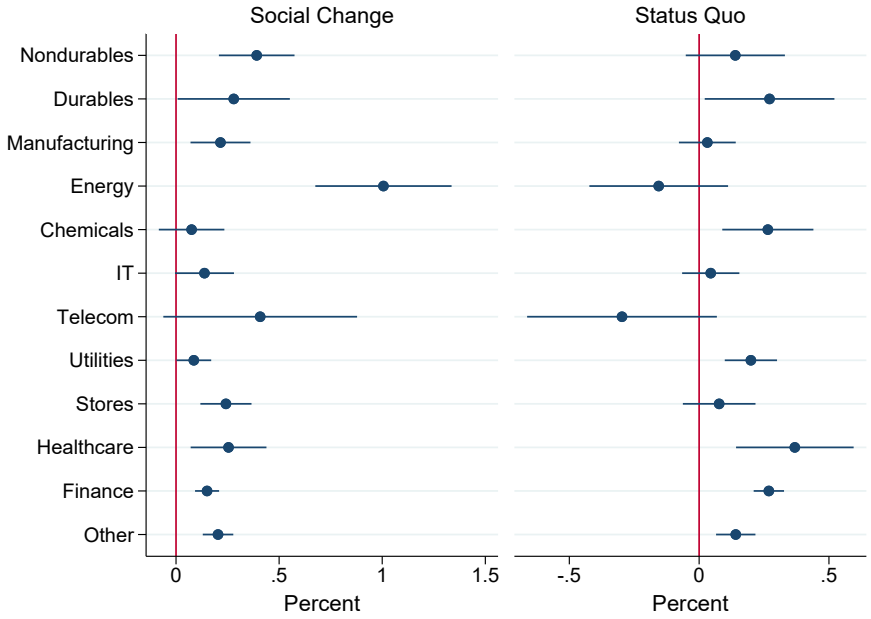


Figure 5: Industry Coefficients

This figure shows the coefficients (dots) for the *Social Change* and *Status Quo* indicator variables in panel regressions of firms by industry. The bars indicate the 95% confidence intervals. The sample period for these regressions is on or after May 25, 2020. Abnormal returns are the residual (in percent) from the Fama-French three-factor model. Panel A gives the coefficients for absolute abnormal returns, and Panel B displays the coefficients for abnormal returns.

Panel A: Absolute Abnormal Returns



Panel B: Abnormal Returns

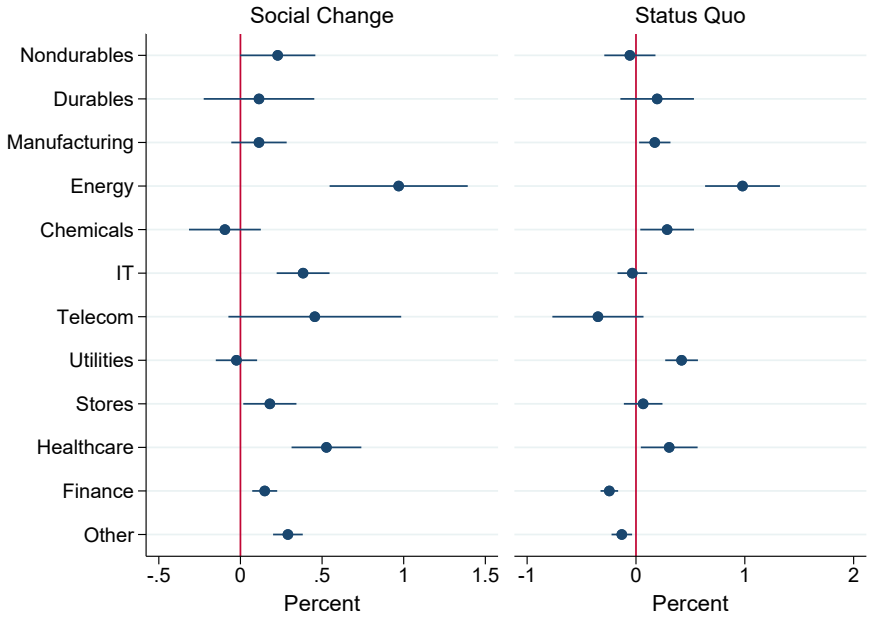
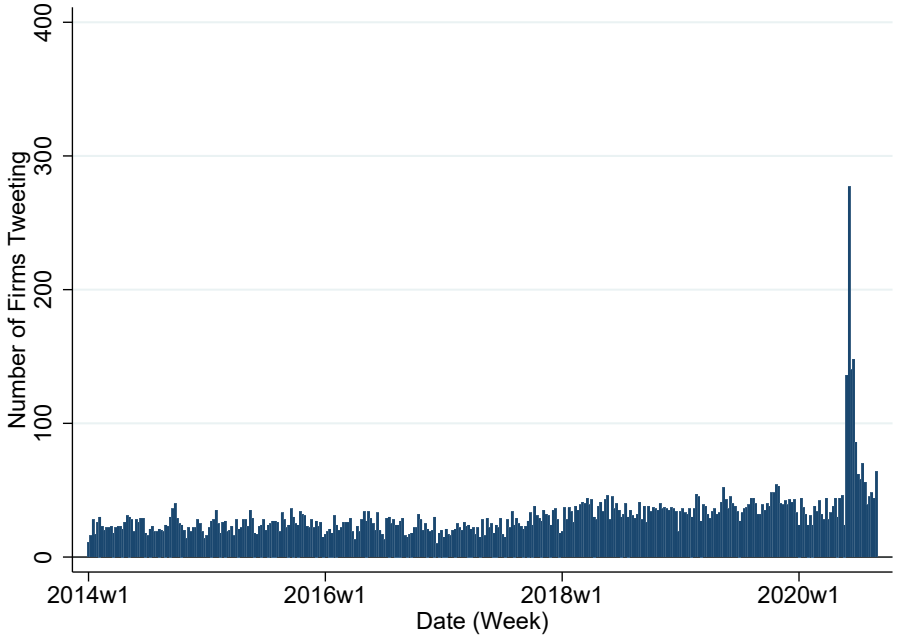


Figure 6: Announcements on Twitter by Public U.S. Firms

This figure shows the weekly count of firms tweeting about race-related events from January 1, 2014 through August 31, 2020. Panel A displays the count based on the list of terms used to identify the timing of race-related events in our study given in footnote 11. Panel B shows the count based on the following five generic terms: diversity, inclusion, equality, racial, and justice.

Panel A: Tweets about Recent Race-Related Events



Panel B: Tweets about Diversity, Equity, and Inclusion

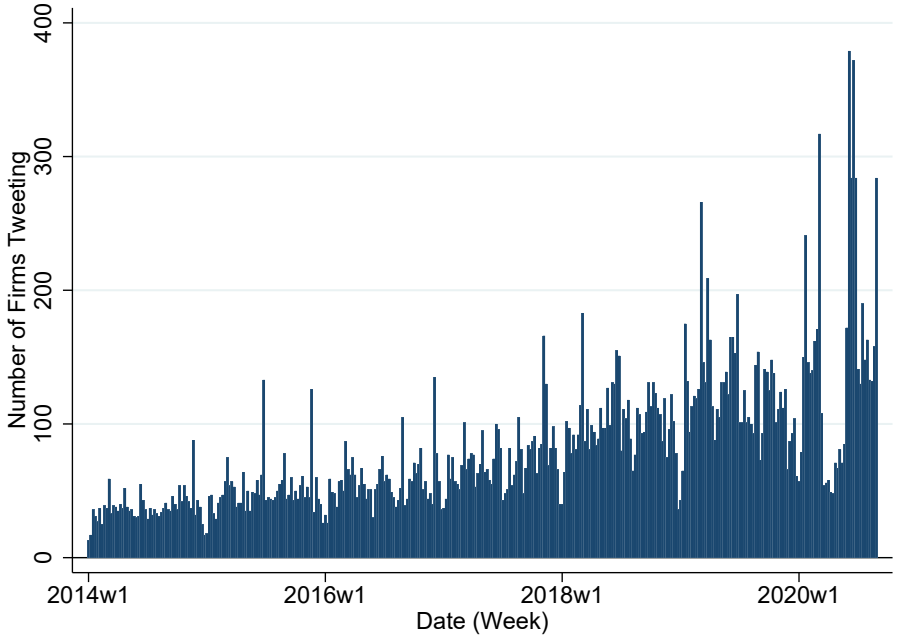
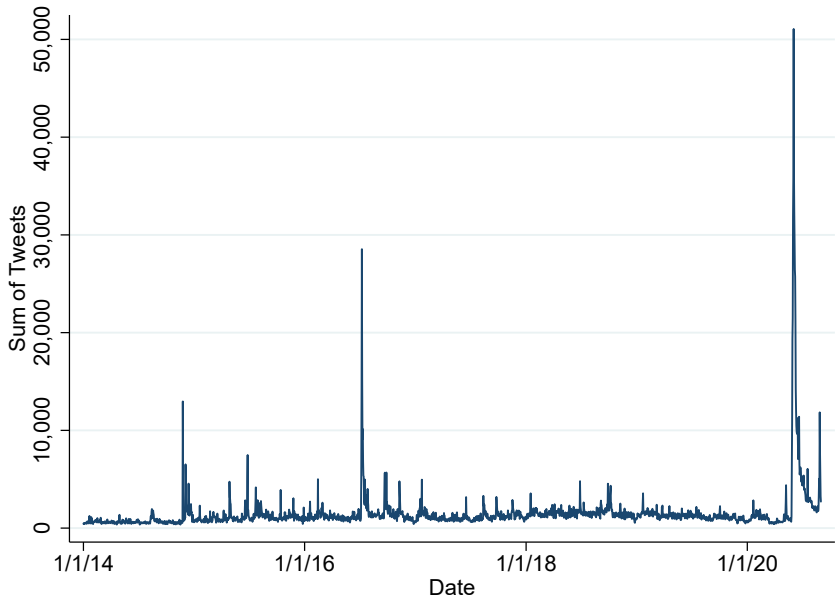


Figure 7: Attention to Race-Related Events

This figure shows daily attention to race issues based on tweeting by the U.S. public about race-related events from January 1, 2014 through August 31, 2020. The tweets include any of the following terms by users located in the United States: #BlackLivesMatter, Black Lives Matter, civil rights, diversity, equality, excessive force, inclusion, justice, police brutality, police shooting, racial, racial profiling, or white privilege. Panel A provides the sum of tweets using these terms. Panel B displays the first principal component for tweets with these terms.

Panel A: Total Tweets



Panel B: First Principal Component

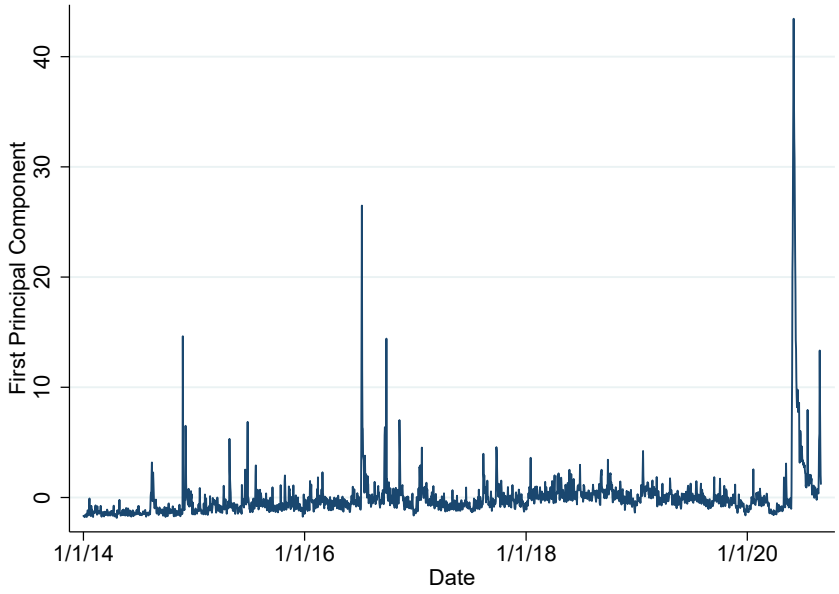


Table 1: Summary Statistics

This table provides summary statistics for variables in this paper. Panel A lists variables for returns, volume, and events, Panel B includes firm characteristics, and Panel C is the correlation matrix of firm characteristics related to race. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The sample period is May 25, 2020 to August 31, 2020.

Panel A: Returns, Volume, and Event Variables

Variable	Number of Observations	Mean	Median	Standard Deviation
Absolute Abnormal Return	243,763	2.690	1.620	5.068
Volume	243,763	1,865,675	360,692	8,006,337
Abnormal Return	243,763	0.027	-0.183	5.738
Race-related Event	243,763	0.494	0.000	0.500
Social Change	243,763	0.320	0.000	0.466
Status Quo	243,763	0.232	0.000	0.422

Panel B: Firm Characteristics

Variable	Number of Observations	Mean	Median	Standard Deviation
High Retail Ownership	229,266	0.498	0.000	0.500
Low Corporate Governance	203,927	0.510	1.000	0.500
No International Sales	243,763	0.652	1.000	0.476
Low Firm Size	235,061	0.480	0.000	0.500
Downstream	243,211	0.512	1.000	0.500
Low Corporate Governance	194,957	0.500	0.000	0.500
No Social Media	243,763	0.580	1.000	0.494
Low Manager Diversity	241,746	0.578	1.000	0.494
High EEOC Complaints	243,763	0.499	0.000	0.500

Table 1 (continued)

Panel C: Correlation of Firm Characteristics

	High Retail Own	Low Corp Gov	No Intl Sales	Low Firm Size	Downstream	Low Social Score	No Social Media	Low Manager Diversity
High Retail Own	1.000							
Low Corp Gov	0.093	1.000						
No Intl Sales	0.171	0.129	1.000					
Low Firm Size	0.151	0.235	0.118	1.000				
Downstream	-0.056	0.089	0.008	0.214	1.000			
Low Social Score	0.138	0.199	0.195	0.259	-0.055	1.000		
No Social Media	0.093	0.131	0.180	0.224	0.0170	0.318	1.000	
Low Manager Diversity	-0.120	-0.016	-0.259	0.218	0.248	-0.030	0.065	1.000
High EEOC Complaints	-0.046	-0.089	-0.032	-0.236	-0.066	-0.105	-0.166	-0.247

Table 2: Valuation Effects of Race-Related Events

This table reports the valuation effects of race-related events. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Information Arrival

	Absolute Abnormal Return		Volume	
	(1)	(2)	(3)	(4)
Race-related Event	0.357***		0.211***	
	(0.027)		(0.016)	
Social Change		0.229***		0.146***
		(0.031)		(0.018)
Status Quo		0.142***		0.094***
		(0.031)		(0.020)
Firm Fixed Effects	Yes	Yes	Yes	Yes
R^2	0.126	0.125	0.794	0.792
Observations	243,763	243,763	243,763	243,763

Panel B: Directional Effects

	Abnormal Return	
	(1)	(2)
Race-related Event	0.163***	
	(0.042)	
Social Change		0.282***
		(0.049)
Status Quo		-0.008
		(0.049)
R^2	0.000	0.001
Observations	243,763	243,763

Table 3: Firm Decision-making

This table studies the importance of decision-making at firms on the stock-price response to race-related events. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *High Retail Own* is an indicator variable if a firm has above median retail ownership. *Low Corp Gov* is an indicator variable if a firm has below-median corporate governance. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term and characteristic level term are included in each model but omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Abnormal Return		
	(1)	(2)	(3)
Social Change	0.110**	0.148***	0.058
	(0.047)	(0.045)	(0.047)
Social Change	0.350***		0.243***
× High Retail Own	(0.068)		(0.066)
Social Change		0.089*	0.067
× Low Corp Gov		(0.054)	(0.054)
Status Quo	0.069	0.069	0.132***
	(0.045)	(0.047)	(0.047)
Status Quo	-0.149**		-0.158**
× High Retail Own	(0.069)		(0.066)
Status Quo		-0.167***	-0.143**
× Low Corp Gov		(0.056)	(0.057)
R^2	0.001	0.000	0.001
Observations	229,266	203,927	194,819

Table 4: Market Position

This table evaluates the effects of a firm's market position on the stock-price response to race-related events. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *No Intl Sales* is an indicator variable equaling one if a firm does not have any international customers that represent at least 10% of its annual sales. *Low Firm Size* is an indicator variable equaling one if a firm has below-median book value of assets. *Downstream* is an indicator variable equaling one if a firm has below-median upstreamness as developed in Antràs et al. (2012). *High Retail Ownership* (*Low Retail Ownership*) is an indicator variable if a firm has above (below) median retail ownership. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term and characteristic level term are included in each model but omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Abnormal Return					
	(1)	(2)	(3)	(4)	(5)	(6)
Social Change	0.269***	0.080*	0.180**	0.035	0.403***	0.143**
	(0.071)	(0.046)	(0.086)	(0.044)	(0.088)	(0.067)
Social Change × Char	0.255**	0.053	0.379***	0.154**	0.112	-0.061
	(0.108)	(0.074)	(0.128)	(0.071)	(0.143)	(0.094)
Status Quo	0.100	0.105**	-0.113	0.156***	-0.066	0.020
	(0.080)	(0.046)	(0.089)	(0.042)	(0.088)	(0.059)
Status Quo × Char	-0.242**	-0.065	0.078	-0.237***	-0.029	0.089
	(0.117)	(0.072)	(0.135)	(0.078)	(0.145)	(0.089)
Characteristic	No Intl Sales		Low Firm Size		Downstream	
Retail Ownership	High	Low	High	Low	High	Low
R^2	0.001	0.000	0.001	0.000	0.001	0.000
Observations	114,262	115,004	110,809	110,731	113,917	114,797

Table 5: Social Engagement and Diversity

This table examines the role of social engagement and diversity on the stock-price response to race-related events. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *Low Social Score* is an indicator variable equaling one if a firm's social score is below median. *No Social Media* is an indicator variable equaling one if a firm has no tweets about a topic related to diversity, equity, and inclusion. *Low Manager Diversity* is an indicator variable if a firm is in an industry based on three-digit NAICS codes with a below-median share of Black senior managers. *High EEOC Complaints* is an indicator variable if a firm receives an above-median share of complaints about discrimination against Black individuals based on its industry using six-digit NAICS codes and number of employees. *High Retail Ownership* (*Low Retail Ownership*) is an indicator variable if a firm has above (below) median retail ownership. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term and characteristic level term are included in each model but omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Abnormal Return							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Social Change	0.169**	0.051	0.248***	0.040	0.331***	0.046	0.496***	0.096
	(0.078)	(0.045)	(0.068)	(0.043)	(0.094)	(0.050)	(0.099)	(0.079)
Social Change × Char	0.230**	0.071	0.319***	0.141*	0.239*	0.105	-0.083	0.025
	(0.091)	(0.078)	(0.091)	(0.078)	(0.141)	(0.085)	(0.129)	(0.087)
Status Quo	-0.091	0.041	-0.149**	-0.008	-0.191**	-0.064	0.045	0.146**
	(0.081)	(0.049)	(0.073)	(0.047)	(0.091)	(0.055)	(0.104)	(0.068)
Status Quo × Char	-0.098	0.082	0.104	0.155**	0.212	0.222***	-0.286**	-0.136*
	(0.095)	(0.066)	(0.091)	(0.065)	(0.141)	(0.084)	(0.135)	(0.079)
Characteristic	Low Social Score		No Social Media		Low Manager Diversity		High EEOC Complaints	
Retail Ownership	High	Low	High	Low	High	Low	High	Low
R^2	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Observations	75,434	109,587	114,262	115,004	113,625	113,693	114,262	115,004

Table 6: LASSO Regressions

This table provides the results from LASSO regressions to evaluate the variables selected when including all variables described in Section 7. *Full Sample Coefficients* lists the coefficients from a LASSO regression on the full sample. *Frequency Selected* shows the frequency (in percent) that a particular variable is selected in a repeated analysis based on 1,000 random subsamples. *Frequency Positive* displays the frequency (in percent) of positive coefficients from repeated LASSO regressions that selected the particular variable. We display the variables that are selected at least 33% of the time for evaluating the stability of LASSO variable selection. We include the level terms as potential variables for LASSO regressions to select, but we omit them from the table for brevity. Appendix B provides details on variable definitions.

	Full Sample Coefficients	Frequency Selected (%)	Frequency Positive (%)
Variables	(1)	(2)	(3)
Status Quo × No Intl Sales × High Retail Own	-0.263	100.0	0.0
Status Quo × Low Manager Diversity	0.202	100.0	100.0
Status Quo × Low Firm Size	-0.127	93.0	0.0
Social Change × No Intl Sales × High Retail Own	0.111	85.9	100.0
Social Change × Low Firm Size × High Retail Own	0.074	70.7	100.0
Social Change × No Social Media	0.074	91.1	100.0
Social Change × Low Social Score × High Retail Own	0.063	72.9	100.0
Social Change × Low Firm Size	0.051	79.7	100.0
Status Quo × Low Corp Gov	-0.047	70.0	0.0
Status Quo × Downstream × High Retail Own	-0.042	53.6	0.0
Status Quo × Low Social Score	0.035	47.9	100.0
Status Quo × No Social Media	0.034	48.3	100.0
Social Change × Low Social Score	0.032	70.2	100.0
Social Change	0.011	43.5	100.0
Social Change × High Retail Own	0.000	49.0	100.0
Social Change × No Intl Sales	0.000	33.2	100.0

Table 7: Valuation Effects for Extended Sample

This table reports valuation responses to race-related events. *Abnormal returns* are the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *Late* is an indicator variable if a trading date is on or after May 25, 2020. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is January 1, 2014 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	-0.109***		-0.059***		-0.007	
	(0.018)		(0.006)		(0.020)	
Race-related Event × Late	0.596***		0.271***		0.189***	
	(0.038)		(0.021)		(0.048)	
Social Change		-0.052**		-0.046***		-0.004
		(0.022)		(0.006)		(0.025)
Social Change × Late		0.357***		0.194***		0.411***
		(0.046)		(0.023)		(0.056)
Status Quo		-0.187***		-0.038***		-0.024
		(0.016)		(0.010)		(0.020)
Status Quo × Late		0.403***		0.133***		-0.176***
		(0.042)		(0.027)		(0.054)
Late	0.306***	0.400***	0.384***	0.423***	-0.046*	-0.040
	(0.024)	(0.024)	(0.013)	(0.012)	(0.027)	(0.026)
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
R^2	0.029	0.029	0.778	0.778	0.000	0.000
Observations	6,044,498	6,044,498	6,044,498	6,044,498	6,044,498	6,044,498

Table 8: Attention

This table examines the role of attention for the firm-level response to race-related events. *Abnormal returns* are the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *High Attention* is an indicator variable if there are above-median total tweets of the terms defined in Figure 7 on days with a *Race-related Event*. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day. The sample period in Panel A is January 1, 2014 to August 31, 2020, and the sample period in Panel B is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Extended Sample

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	-0.167***		-0.079***		-0.019	
	(0.020)		(0.007)		(0.023)	
Race-related Event	0.614***		0.435***		0.108***	
× High Attention	(0.028)		(0.014)		(0.033)	
Social Change		-0.145***		-0.077***		-0.030
		(0.026)		(0.007)		(0.028)
Social Change		0.517***		0.340***		0.261***
× High Attention		(0.038)		(0.018)		(0.044)
Status Quo		-0.161***		-0.041***		0.020
		(0.019)		(0.013)		(0.025)
Status Quo		0.384***		0.305***		-0.216***
× High Attention		(0.034)		(0.027)		(0.041)
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
R^2	0.029	0.029	0.775	0.775	0.000	0.000
Observations	6,044,498	6,044,498	6,044,498	6,044,498	6,044,498	6,044,498

Table 8 (continued)

Panel B: Sample Starting May 25, 2020

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	0.146***		0.130***		0.015	
	(0.030)		(0.020)		(0.048)	
Race-related Event	0.448***		0.164***		0.312***	
× High Attention	(0.040)		(0.024)		(0.067)	
Social Change		-0.161***		0.001		0.088
		(0.036)		(0.024)		(0.059)
Social Change		0.720***		0.256***		0.355***
× High Attention		(0.054)		(0.032)		(0.087)
Status Quo		0.208***		0.113***		0.053
		(0.033)		(0.025)		(0.058)
Status Quo		0.142***		0.074**		-0.043
× High Attention		(0.053)		(0.036)		(0.093)
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
R^2	0.127	0.127	0.795	0.794	0.001	0.001
Observations	243,763	243,763	243,763	243,763	243,763	243,763

Appendix A Classification rubric

The proximate social impact of various race-related events is arguably heterogeneous. To distinguish between events in terms of their directional impact on racial dynamics in U.S. society, we used the following classification rubric:

Characteristics of a social-change event:

- An event in the legal process that can be reasonably perceived as protecting the legal rights of a Black person in a race-related incident. This criterion is not about innocence or guilt, but rather about perceptions regarding the absence of possible bias in the legal process.
- Removal or elimination of a perceived symbol of discrimination against Black people.
- A peaceful protest opposed to racism against Black people. Note that the event materiality criterion in the sample event construction step means protests are only included if they are large enough (or early enough) to be newsworthy.
- A high-profile statement by a prominent leader or organization acknowledging or opposing racism against Black people.

Characteristics of a status-quo event:

- A Black person is violently harmed in a way that could be reasonably perceived as having a significant probability of being racially motivated.
- A legal outcome that can be reasonably perceived as not adequately protecting the legal rights of a Black person. This criterion is not about innocence or guilt, but rather about perceptions regarding the absence of possible bias in the legal process.
- A Black person commits a visible race-related act of violence or an anti-racism protest becomes violent in a way that could undercut public support for anti-racism.
- An incident involving protection of or support for perceived symbols of discrimination against Black people.

- Public criticism of efforts to reduce or protest against racism against Black people.

News articles can include characteristics of both social-change and status-quo events. In three cases out of the 83 classified articles, the net material innovation was larger for social change relative to status quo. For example, in one case a prominent Republican official condemned an event as a hate crime (a social-change characteristic), while initially voicing opposition to some proposed remedies (consistent with status quo). This event was classified as a social-change event that, on balance, reduced support for Confederate symbols and reduced political polarization.

Appendix B Variable definitions

The variables used in the paper are defined as follows.

- *Abnormal Return* is the residual (in percent) from the Fama-French three-factor model.
- *Absolute Abnormal Return* is the absolute value of the abnormal return.
- *BLS* is an indicator variable equaling one on the following day and day of an Bureau of Labor Statistics Employment-Situation announcement.
- *Downstream* is an indicator variable equaling one if a firm has below-median upstreamness as developed in Antràs et al. (2012).
- *Earnings* is an indicator variable equaling one on the following day and day of an earnings announcement.
- *FOMC* is an indicator variable equaling one on the following day and day of an Federal Open Market Committee announcement.
- *High Attention* is an indicator variable if there are above-median total tweets of the terms defined in Figure 7 on days with a *Race-related Event*.
- *High EEOC Complaints* is an indicator variable if a firm receives an above-median share of complaints about discrimination against Black individuals based on its industry using six-digit NAICS codes and number of employees.
- *High Retail Own* is an indicator variable if a firm has above-median retail ownership.
- *Late* is an indicator variable if a trading date is on or after May 25, 2020.
- *Low Corp Gov* is an indicator variable if a firm has below-median corporate governance.
- *Low Firm Size* is an indicator variable equaling one if a firm has below-median book value of assets.
- *Low Manager Diversity* is an indicator variable if a firm is in an industry based on three-digit NAICS codes with a below-median share of Black senior managers.

- *Low Social Score* is an indicator variable equaling one if a firm's social score is below median.
- *No Intl Sales* is an indicator variable equaling one if a firm does not have any international customers that represent at least 10% of its annual sales.
- *No Social Media* is an indicator variable equaling one if a firm has no tweets about a topic related to diversity, equity, and inclusion.
- *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race.
- *Social Change* is an indicator variable if a *Race-related Event* supports social change.
- *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo.
- *Volume* is the total trading volume on a particular day.

Internet Appendix

Economic Impact of U.S. Racial Dynamics: Evidence from the Stock Market

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Table A1: Valuation Effects: One-Week Window

This table provides robustness to the event window for the valuation response to race-related events. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days and on the three days following publication for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	0.297***		0.216***		0.201***	
	(0.029)		(0.017)		(0.042)	
Social Change		0.356***		0.219***		0.187***
		(0.029)		(0.018)		(0.046)
Status Quo		-0.070**		-0.025		-0.035
		(0.030)		(0.018)		(0.047)
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
R^2	0.125	0.126	0.793	0.793	0.000	0.000
Observations	243,763	243,763	243,763	243,763	243,763	243,763

Table A2: Valuation Effects: Standard Errors

This table provides robustness to standard errors. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Panel A uses standard errors clustered by date and industry-week and Panel B uses Newey-West standard errors. Standard errors are reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Date and Industry-Week Clustering

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	0.357***		0.211***		0.163*	
	(0.104)		(0.042)		(0.089)	
Social Change		0.229*		0.146***		0.282**
		(0.136)		(0.053)		(0.107)
Status Quo		0.142		0.094		-0.008
		(0.133)		(0.067)		(0.100)
Firm Fixed Effects	Yes	Yes	No	No		
R^2	0.126	0.125	0.794	0.792	0.000	0.001
Observations	243,763	243,763	243,763	243,763	243,763	243,763

Panel B: Newey-West Standard Errors

	Absolute Abnormal Return		Volume		Abnormal Return	
	(1)	(2)	(3)	(4)	(5)	(6)
Race-related Event	0.357***		0.141***		0.163***	
	(0.021)		(0.006)		(0.023)	
Social Change		0.229***		0.081***		0.282***
		(0.022)		(0.006)		(0.025)
Status Quo		0.142***		0.043***		-0.008
		(0.024)		(0.006)		(0.027)
Firm Fixed Effects	Yes	Yes	No	No		
R^2	0.126	0.125	0.794	0.792	0.000	0.001
Observations	243,763	243,763	243,763	243,763	243,763	243,763

Table A3: Valuation Effects: Other Events

This table incorporates dates with firm-level and macroeconomic announcements in the analysis on the effect of race-related events on information arrival. *Abnormal return* is the residual (in percent) from the Fama-French three-factor model. *Volume* is the total trading volume on a particular day. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. *Earnings*, *FOMC* and *BLS* are indicator variables equaling one on the following day and day of an earnings, Federal Open Market Committee announcement, and Bureau of Labor Statistics Employment-Situation announcement, respectively. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Absolute Abnormal Return		Volume	
	(1)	(2)	(3)	(4)
Race-related Event	0.382***		0.222***	
	(0.027)		(0.017)	
Social Change		0.232***		0.146***
		(0.031)		(0.018)
Status Quo		0.172***		0.104***
		(0.033)		(0.021)
Earnings	1.912***	1.871***	0.487***	0.463***
	(0.085)	(0.085)	(0.031)	(0.031)
FOMC	0.095	0.211***	-0.014	0.048
	(0.062)	(0.063)	(0.032)	(0.032)
BLS	0.493***	0.512***	0.138***	0.150***
	(0.076)	(0.075)	(0.036)	(0.036)
Firm Fixed Effects	Yes	Yes	Yes	Yes
R^2	0.131	0.130	0.797	0.795
Observations	243,763	243,763	243,763	243,763

Table A4: Valuation Effects: Price Measurement

This table provides robustness based on price measurement. Panel A uses only closing prices based on transactions. Panel B includes only closing prices based on transactions and prices between \$5 and \$1,000. *Abnormal returns* are the residual (in percent) from the Fama-French three-factor model. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Closing Prices

	Absolute Abnormal Return		Abnormal Return	
	(1)	(2)	(3)	(4)
Race-related Event	0.360***		0.163***	
	(0.027)		(0.043)	
Social Change		0.230***		0.286***
		(0.032)		(0.050)
Status Quo		0.144***		-0.012
		(0.031)		(0.049)
Firm Fixed Effects	Yes	Yes	No	No
R^2	0.125	0.125	0.000	0.001
Observations	241,394	241,394	241,394	241,394

Panel B: Closing Prices and Liquidity

	Absolute Abnormal Return		Abnormal Return	
	(1)	(2)	(3)	(4)
Race-related Event	0.322***		0.064*	
	(0.022)		(0.037)	
Social Change		0.178***		0.113***
		(0.025)		(0.040)
Status Quo		0.172***		-0.008
		(0.027)		(0.044)
Firm Fixed Effects	Yes	Yes	No	No
R^2	0.131	0.130	0.000	0.000
Observations	187,810	187,810	187,828	187,828

Table A5: Valuation Effects: Beta Estimation

This table provides robustness to beta estimation. *Abnormal returns* are the residual (in percent) from the Fama-French three-factor model. *Race-related Event* is an indicator variable equaling one on the publication and pre-publication days for an event related to race. *Social Change* is an indicator variable if a *Race-related Event* supports social change. *Status Quo* is an indicator variable if a *Race-related Event* supports the status quo. Appendix B provides additional details on variable definitions. The unit of observation is a firm-trading day and the sample period is May 25, 2020 to August 31, 2020. A constant term is included in each model but is omitted below for brevity. Standard errors are clustered by industry-trading day and reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Full-sample Betas

	Absolute Abnormal Return		Abnormal Return	
	(1)	(2)	(3)	(4)
Race-related Event	0.333***		0.168***	
	(0.025)		(0.040)	
Social Change		0.253***		0.323***
		(0.030)		(0.047)
Status Quo		0.068**		-0.104**
		(0.029)		(0.044)
Firm Fixed Effects	Yes	Yes	No	No
R^2	0.120	0.119	0.000	0.001
Observations	247,549	247,549	247,549	247,549

Panel B: In-sample Betas

	Absolute Abnormal Return		Abnormal Return	
	(1)	(2)	(3)	(4)
Race-related Event	0.327***		0.162***	
	(0.025)		(0.040)	
Social Change		0.236***		0.284***
		(0.030)		(0.046)
Status Quo		0.084***		-0.012
		(0.028)		(0.044)
Firm Fixed Effects	Yes	Yes	No	No
R^2	0.130	0.130	0.000	0.001
Observations	247,549	247,549	247,549	247,549