



# A reinvestigation of the stock price reactions to announcements of Black top executive appointments

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*We investigate the stock market reactions to the announcements of Black CEO and top management team (TMT) appointments in light of two conflicting studies that advance competing and opposite theories. In 2021, Gligor and colleagues theorized that reactions will be negative due to racial stereotyping, and found negative mean stock price reactions for both Black CEOs and TMTs. Conversely, in 2023, Jeong and colleagues theorized that the stock market will respond positively to the appointment of Black CEOs, because these CEOs have to meet a “higher bar” to be appointed. They reported a positive mean reaction to such appointments. In our quasi-replication of these two prior studies, we find a reliably positive mean reaction for Black CEOs but an immaterial median reaction, and no marginal stock price impact to the announcement of the appointment of a Black CEO and TMT executives after controlling for explanatory factors that go outside the racial bias and higher bar theories. In light of the fragility and lack of robustness in these results, we recommend that future research in the area of Black top executives and the stock market be cautious when presenting and interpreting results.*

**Keywords:** *Black executive appointments; racial bias; higher bar theory; stock market reactions*

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## Introduction

Top executives are a focus of corporate strategy research because strategic outcomes are closely linked to the actions of a firm's top executives (Finkelstein et al., 2008). However, beyond actions per se, firms can also be affected by perceptions that stakeholders have of their top executives (de Luque et al., 2008; Lee & James, 2007; Quigley et al., 2017). Since announcements of executive appointments can affect investor perceptions of the firm and its stock market value (Connelly et al., 2016; Dixon-Fowler et al., 2013), demographic characteristics can play a central role in how a CEO is perceived by their employees, their board, and the stock market (Lee & James, 2007; Westphal & Stern, 2007). In particular, previous research has shown that race is a salient demographic characteristic that impacts the perception of CEOs. For example, Black male CEOs who have a "babyface" are judged to be warmer than Black CEOs with mature faces, while this effect is the opposite for White male CEOs (Livingston & Pearce, 2009).

In this article, we study how the stock market reacts to the announcement of the appointment of a Black CEO or Black top management team (TMT) member of a U.S. publicly traded firm, and what can be inferred about racial bias and CEO talent from such reactions. We do so by testing two competing theories on this topic posited in recently published papers. One theory proposes market returns will be lower for firms that announce a Black CEO because market participants have a negative bias due to stereotypical thinking (Gligor et al., 2021). The competing theory proposes that market returns will be higher for firms that announce a Black CEO because market perception that this individual has had to perform at a higher bar than non-Black CEOs due to discrimination within the corporate sector (Jeong et al., 2023). We utilize a quasi-replication approach, where we aim to retain the virtues of the previous studies while also contributing improvements that allow for improved hypothesis testing and interpretation of results (Bettis et al., 2016, p. 2195).

Drawing on research about how social evaluations can be shaped by racial stereotypes, Gligor et al. (2021) propose that firms' stock market reactions will be more negative when they announce the appointment of a Black CEO than a White CEO, and more negative when they announce the appointment of a Black TMT than a White TMT. Using a sample of CEO and TMT appointments made during 2001–2020, Gligor et al. (2021) uses standard narrow-window event study methods to estimate and compare the mean abnormal stock returns of firms that announce a Black CEO or TMT with those of similar firms that announce a White CEO or TMT. They report finding large negative mean 3-day cumulative abnormal stock returns CAR  $[-1, +1]$  of  $-4.3\%$  and  $-3.0\%$  for the appointment announcements of 83 Black CEOs and 291 Black TMTs, respectively, as compared to small positive CAR  $[-1, +1]$  of  $0.6\%$  and  $0.5\%$  for the appointment announcements of 83 White CEOs and 291 White TMTs. Based on their results, Gligor et al. (2021) conclude that "shareholders can develop biased performance expectations for firms, depending on the race of their newly appointed executives" and suggest that their "findings serve to raise further awareness regarding the undesirable consequences associated with racial discrimination." (pp. 1954–1955).

In marked contrast, a replication study by Jeong et al. (2023) finds a large positive mean CAR  $[-1, +1]$  of  $3.1\%$  to the announcements of 57 Black CEO appointments over the 2001–2020 period, and a small negative mean CAR  $[-1, +1]$  of  $-0.9\%$  to the announcements of a matched set of 57 White CEO appointments (the authors did not perform a replication

analysis for Black TMT announcements). Jeong et al. (2023) interpret their results as evidence that any racial bias in the stock market is outweighed by the effects of the “higher bar” theory which proposes that “investors may deem [Black CEOs] especially capable for having beaten the odds to be appointed to the pinnacle of corporate leadership” (p. 5).

The results reported by these two recently published studies are notable in the strategy field because the large reported magnitudes and small associated  $p$ -values for Black CEOs and TMTs run strongly counter to each other and to the results reported by Cook and Glass (2008) who found only a small mean abnormal stock return at the appointment announcements of 70 Black executives in U.S. public companies during the period 1996–2006. The findings of Gligor et al. (2021) also have the potential to be highly influential in future research and practice given the increased dialog within the academic and corporate arenas around the causes and consequences of racial and ethnic diversity in corporate boards (Miller & del Carmen Triana, 2009), executives and employees (Roberson, 2019), and the ways in which academia has investigated these topics (Bates & Ng, 2021).

In this article, we test the competing theories about market reactions to Black CEO and TMT executive appointments. We believe that this is valuable and set within a compelling setting for such an empirical investigation because it allows us to investigate the robustness of the inferences made in two competing theories about the stock market reactions to the appointment announcements of Black CEOs and TMTs, and consequently about the validity of theories put forward in them. We approach the investigation by undertaking a quasi-replication, defined as a study which investigates if the prior results generalize to both the same data and sample as well as a different sample within the same population (Bettis et al., 2016). Specifically, our CEO sample has significant sample overlap with Jeong et al. (2023), while our TMT sample should be considered as a new sample from the same population because Gligor et al. (2021) have not made their data available for comparison. Our quasi-replication is independent, in that the original authors of both papers were not involved in the construction of our dataset, and constructive, in that we keep the strengths of the original research design yet contribute new elements that we believe provide new empirical insights (Köhler & Cortina, 2023).

Our final sample consists of 78 Black and White CEOs, and 101 Black TMTs, all appointed between 2000 and 2020. There are several key results. First, we find a positive raw mean CAR  $[-1, +1]$  for Black CEO announcements, lending support to the “higher bar” theory proposed by Jeong et al. (2023). We find no evidence of racial stereotype discrimination of the kind proposed by Gligor et al. (2021). Second, we find effectively zero mean and median CAR  $[-1, +1]$  for our sample of Black TMT appointments, which runs counter to the negative mean TMT CAR  $[-1, +1]$  reported by Gligor et al. (2021).

Third, we find that the CAR  $[-1, +1]$  for Black CEO appointment announcements are statistically indistinguishable from zero using alternative nonmean measures of central tendency. In particular, the median CAR  $[-1, +1]$  is indistinguishable from zero in our dataset as well as in the datasets of Gligor et al. (2021) and Jeong et al. (2023). This lack of robustness as to the location of the central tendency of the distribution of individual CAR  $[-1, +1]$  indicates that relying solely on the magnitude and  $p$ -value of a mean stock price reaction can lead to fragile and/or misleading conclusions about both the central tendency of the observed individual CAR  $[-1, +1]$  being studied and the validity of theories that seek to explain them. While our analysis finds that extremely positive reactions in a small number of nano-cap stocks

play a key role in the magnitude and  $p$ -value of the mean CAR  $[-1, +1]$ , we caution against overweighting the race of the CEO, given the various other plausible reasons why very large stock price reactions are not uncommonly seen in nano-cap stocks (White, 2016).

Lastly, we find no effects marginal for Black CEOs using multivariate regression analysis of the individual CAR  $[-1, +1]$  in our matched Black/White CEO sample, nor when we include prior year stock performance in the regression estimation (a control variable that was not used in previous papers).

Based on our results, we conclude that mean stock price reactions alone are a fragile and nonrobust source of evidence with regard to theories about the stock market reactions to Black executive appointments. These include the theoretical mechanism proposed by Gligor et al. (2021) that the stock market is racially biased against Black CEOs and TMTs, the argument by Jeong et al. (2023) that investors may believe Black CEOs exhibit exceptional talents, and the proposition that the appointment of a Black CEO is a visible, credible and positive reputational signal to the stock market that the firm is an equitable and inclusive organization that does not racially discriminate, leading to predicted superior future financial performance. Due to greater dialogue in the academic and corporate arenas about the causes and consequences of executive and employee racial and ethnic diversity, we therefore recommend that future research in the area of Black top executives be fittingly cautious when presenting and interpreting its results. One way of achieving this would be for future event studies to more broadly report not only mean measures of the central tendency of firms' stock price reactions, but also the size and associated  $p$ -values of median reactions, thereby providing visibility into multiple measures of central tendency and their connections back to proposed theories that underlie them.

## Theoretical background

Recent research on the stock market reactions to the announcements of the appointments of Black CEOs and TMTs is centered on two papers that arrive at diametrically opposite empirical results. On the one hand, Gligor et al. (2021) argue that firms that appoint a Black CEO will experience a negative abnormal stock market reaction. They argue that this negative effect is primarily due to stereotype-based racial discrimination by investors which leads to lower valuations for firms that appoint a Black CEO. Stereotypes are a set of attributes that are ascribed to a group and then imputed to a single individual solely because the individual belongs to that group (Bersoff, 1991). Stereotype-based racial discrimination predicts that a significant portion of investors hold the belief that Black executives are less capable than White executives and thus lower their perceived value of a firm that appoints a Black executive regardless of his or her demonstrated competence. Evidence of this form of racial discrimination within organizations has been found in research about the experiences of Black executives (Anderson, 2011; Cornileus, 2013; Erskine et al., 2021; Thomas & Gabarro, 1999) as well as research about discrimination in employment hiring (Quillian & Midtbøen, 2021). The stereotype-based racial discrimination argument also aligns with research on pro-White leadership bias that finds that general audiences within the United States implicitly associate leadership qualities with Whiteness more than with other racial categories (Gündemir et al., 2014; Petsko & Rosette, 2023). Gligor et al. (2021) also suggest two factors that likely strengthen the negative stock market reaction to Black CEO appointment:

tokenism and the glass cliff theory. An individual is considered a token if they are a member of a demographic group that comprises a small percentage of the overall population (Kanter, 1977). Black CEOs are a good example of a token due to the fact that they make up less than 2% of the CEOs among Fortune's list of the 500 largest U.S. companies by revenue (McGlauffin, 2023). One of the consequences of tokenism, however, is that a token member is often the target of increased stereotypical perceptions due to the low representation from that demographic group in the general population. Thus, because Black CEOs are relatively rare, they can be considered tokens and subject to strong negative stereotypical perceptions. Additionally, Gligor et al. (2021) also argue that the effects outlined in the glass cliff theory may also exacerbate the negative effects of Black CEO appointments. While originally developed in the context of female promotions (Cook & Glass, 2014; Ryan & Haslam, 2005), when applied to Black CEOs the glass cliff theory proposes that Black CEOs are chiefly appointed when firms are performing poorly or are in crisis. As a result, the appointment of a Black CEO can be interpreted by the capital markets as a negative signal about the future performance of the firm, leading to the firm experiencing a negative stock price reaction when it announces that it is appointing a Black CEO. Taken together, the stereotype-based racial discrimination combined with tokenism and glass cliff theory explanations lead Gligor et al. (2021) to hypothesize two main effects:

*H1:* Firms' stock market reactions will be more negative to the announcements of Black CEO appointments than to announcements of White CEO appointments.

*H2:* Firms' stock market reactions will be more negative to the announcements of Black TMT appointments than to announcements of White TMT appointments.

In sharp contrast, Jeong et al. (2023), in their attempt to replicate the findings of Gligor et al. (2021), propose the "higher bar" theory to argue why we might expect a positive stock market reaction to Black CEO and TMT appointments. The "higher bar" theory argues that due to the subtle form of racial discrimination, Black executives face more rigorous talent standards in their careers than do their White counterparts and will therefore on average have performed better in the past than their White counterparts. This will result in a higher abnormal stock market reaction for firms that announce the appointment of a Black CEO than a White CEO because the stock market will infer that the Black CEO will achieve a higher level of performance for the appointing firm in the future. In addition, due to the heightened evaluative rigor facing Blacks, Black senior executives who are eligible to become a CEO will be in shorter supply than will their White counterparts, making the appointment of a Black CEO a visible, positive and credible reputational signal to the stock market that the firm is an equitable and inclusive organization that does not racially discriminate, leading to predicted superior firm performance (Miller & del Carmen Triana, 2009). In summary, Jeong et al. (2023) argue that the appointment of a Black CEO beneficially signals to the stock market that either (a) the firm's new CEO is exceptionally well qualified and/or (b) the firm values diversity, equity, and inclusion which should drive higher future performance due, in part, to reputational benefits. Using these theoretical perspectives, a firm that appoints a Black CEO should then be valued more, not less, highly. We state this formally as:

*H3: Firms' stock market reactions will be more positive to the announcements of Black CEO appointments than to announcements of White CEO appointments.*

Given the diverging theoretical implications and empirical findings of Gligor et al. (2021) and Jeong et al. (2023), we believe there is material value in undertaking a further independent study of the stock price reactions to Black CEO and TMT appointments in order to reassess and increase our understanding of this prominent area of corporate strategy research.

## **Empirical analyses**

### *Data and sample*

To construct our sample, we attempted to our best ability to reproduce similar samples to those in Gligor et al. (2021), which reported a sample of 83 Black CEOs, and Jeong et al. (2023), which reported a sample of 57 Black CEOs. Both previous papers started with a wide media search in LexisNexis and Factiva for all CEO announcements and then identified Black CEOs within that set. In our approach, we began with a self-identified set of Black executives and added to that set from additional sources. The self-identified set of Black executive appointments came from Black Enterprise Magazine's *Most Powerful Executives in Corporate America* lists from issues published in 1993, 2000, 2005, 2009, 2012 and 2017. Established in 1970, Black Enterprise Magazine (BEM) is the most well-known and widely circulated business personal finance magazine aimed at Black entrepreneurs, professionals, and executives. A key BEM goal is to recognize and highlight successful Black businesses and executives. In this regard, BEM's editorial team compiles annual lists of the largest Black-owned firms in the United States, called the *BE Top 100 List*. BEM has also published books detailing the most important Black business leaders in U.S. History (Dingle, 1999). Through this work, BEM has become a trusted resource for information about Black executive leaders, making it our main source of self-identified top Black executives. The number of executives in the BEM list grew from 40 in 1993 to 300 in 2017. From these lists, we identified 22 Black CEOs and 101 Black top management executives across the entire observation period. In alignment with previous research, we define TMT executives as individuals in one of the following positions: Chief Operating Officer, Chief Financial Officer, President, or Executive Vice-President.

We added to our initial dataset from two additional resources. The first was a list of all 130 individuals in Boardex's Black Association Network, of which 26 we identified as Black CEOs, bringing our dataset up to 48 Black CEOs. Second, we compared our data with the data published in the appendix of Jeong et al. (2023), thereby identifying an additional 30 Black CEOs. Adding in these individuals brought us to a total of 78 Black CEOs. While we also wished to include additional Black CEOs and TMTs from Gligor et al. (2021), the authors of that study have chosen not to make their data publicly available, despite repeated requests to do so.

For each Black CEO and TMT in our dataset, we created a unique executive/firm/position triad that we refer to as a feasible Black executive appointment. We then searched Factiva for the earliest announcement of each feasible Black executive appointment and if one was found, we defined the date of the announcement as event day [0], unless the time stamp on

the Factiva story was on or after 4:00 p.m. EST in which case event day [0] is taken to be the next trading day. Using the hypothetical executive/firm/position triad Darryl C. Smith appointed to be CFO of Quality Enterprises, Inc. as the example, the criteria we used in our Factiva searching was of the form [Smith and “Quality Enterprises”], with the only restrictions being Date Range=01/01/2000 to 12/31/2017 and Language=English. We found an announcement for 179 feasible Black executive appointments (for CEOs and TMT executives). Of the 179 announcements, 78 were for CEOs and 101 were for TMT executives. We coded an announcement as “clean” if it only contained information about the Black executive’s appointment, and “confounded” if it contained firm-specific news beyond that of his or her appointment. We found that 92 announcements were clean and 87 were confounded.

Following the standards established in previous research with regard to assessing the stock market reaction to the announcements of the appointments of Black executives, we also collected a matched sample of White CEOs for comparison against our sample of Black CEOs. We started with the 57 matched White CEO announcements from Jeong et al. (2023). To find matched White CEOs for the remaining 21 Black CEO announcements in our dataset, we then searched Dow Jones Newswires using RavenPack. We selected news flashes (news\_type=“NEWS-FLASH”) for executive appointments (category=“executive-appointment”) from U.S. companies (country\_code=“US”) where the executive is identified as the CEO (position\_name=“Chief Executive Officer”). We identified the CEO name and company from the event\_text field and manually searched via Google and LinkedIn to identify their gender. We matched a row from this data to each of the 21 Black executive announcements as long as the White CEO announcement was not already in our sample. We first matched on gender and then on the year of the executive announcement<sup>1</sup>. For the Black CEO and potential matches, we collected Compustat information from the most recent fiscal year, including the fiscal year end market value of equity.

We then sorted the full set of potential matches by the absolute difference in equity market capitalization for the firm at the most recent fiscal year end prior to the announcement. We keep the observation with the smallest absolute difference in market capitalization between the Black CEO observation and the potential match as long as the match is not already in the matched data set and the data was available on Compustat and CRSP had the measured needed to calculate the variables for the regression tests. We iteratively proceeded until all Black CEOs had a corresponding matched White CEO. We also required that all CEO and TMT appointments had sufficient data to calculate abnormal announcement returns. For the observations which were missing certain financial data measures in Compustat and CRSP for the regression tests (four observations), we set those variables equal to the mean of the sample. Firm-level fiscal-year financial data was collected from Compustat, stock return data from CRSP, and risk factors from the Fama & French 3 and 5 factor plus momentum data sets. To identify executive characteristics, we searched LinkedIn and Google. Table 1 displays the descriptive statistics for the firms in our Black/White CEO matched sample ( $n=156$ ) as well as our Black TMT sample ( $n=101$ ). Full details about the Black CEOs, matched White CEOs, and Black TMT executives in our dataset, including their titles and appointment announcement dates, are provided in Appendix A.

**Table 1**  
**Descriptive statistics for Black and matched White CEO and Black top management team (TMT) executives**

	Black CEO		White CEO		Black TMT	
	Mean	Std. dev	Mean	Std. dev	Mean	Std. dev
ln market cap	7.32	2.37	7.24	2.05	9.66	1.45
ln total assets	7.75	2.33	7.43	2.08	10.02	1.51
Enterprise market-to-book	1.76	1.13	1.83	1.17	1.91	1.48
% institutional ownership	36%	39%	38%	38%	21%	35%
Return on sales	-7%	45%	-7%	40%	9%	10%
Prior year annual return	12%	102%	25%	82%	12%	55%
RMSE	0.03	0.02	0.03	0.01	0.02	0.01
Beta	1.15	0.54	0.99	0.44	0.94	0.37
Observations	78		78		101	

RMSE: root mean squared error.

### *Variables employed*

*CEO race.* In alignment with previously published papers on this topic, we focused our study on Black CEOs and Black top management executives. The executives listed in the Black Enterprise Magazine were all coded as Black based on their inclusion in the publication. Each individual in the Boardex listing was coded by one of the coauthors of this study as Black or Not-Black based on a careful visual assessment of a publicly available photo. We also enlisted a research assistant to find self-reported race information for individuals in our BoardEx sample and located self-reported data for 24 of the 26 Black CEOs in the BoardEx dataset.

*Moderator and control variables.* Following Gligor et al. (2021) and Jeong et al. (2023), in our multivariate empirical analysis, we included several control and moderator CEO-announcement variables: *CEO Age* measured as the age of the at the time of appointment; *Female CEO* coded as 1 for all female CEO appointments and zero otherwise; *Industry Insider* coded as 1 if the appointed CEO has previously worked in a different company in the same industry; *Previous Experience as CEO* an indicator variable coded as 1 if the appointed CEO had any previous experience as a CEO; *Former CEO Resigned*, an indicator variable coded as 1 if the previous CEO resigned; and *Inside CEO*, an indicator variable coded as 1 if the appointed CEO was previously employed by the same company. For economic breadth, we also included the following firm-level variables: *Enterprise market-to-book*, calculated as the market value of the firm's equity plus total liabilities divided by total assets from the most recent fiscal year; *Firm size*, calculated as the natural log value of the firm's total assets from the most recent fiscal year end; *Institutional ownership percentage*, calculated as the total percentage of total firm shares that are held by institutional owners; *Return on sales*, calculated as the net income of the firm divided by total revenues from the most recent fiscal year and winsorized at the 1st and 99th percentiles due to a few very large outliers.



Following Gligor et al. (2021) and Jeong et al. (2023), we further included the following return-related variables: The market model *Beta* and *root mean squared error (RMSE)*, calculated using daily returns for the year ending one month before the executive announcement. Using the same methodology, we calculated several measures of unexpected returns: market-adjusted returns using the daily return minus the value-weighted CRSP return index, a four-factor model using the Fama-French three-factor plus momentum factors (FF 3 + mom), and a six-factor model using the Fama-French five-factor plus momentum factors (FF 5 + mom). Lastly, we created the variable *Prior year annual returns*, calculated as a natural log of (1 + the 12-month return of a firm's stock ending 30 days prior to the CEO announcement).

*Empirical methods applied.* For each firm and each 3-trading day event window centered on the executive appointment announcement date [0], we calculated the 3-day [-1, +1] cumulative abnormal stock returns CAR [-1, +1] as the sum of the daily abnormal returns where each daily abnormal return is calculated as the actual observed daily return minus the expected return from the market model or one of the alternative models. In alignment with Gligor et al. (2021) and Jeong et al. (2023), we study the market reactions of the announcement of Black CEOs, per se and as compared to the reactions to matched White CEOs, using standard univariate event study and multivariate regression analyses. In alignment with the approach in Gligor et al. (2021), for Black TMT executive appointments we only conducted a standard event study and did not undertake matched-sample or multivariate regression analyses.

## Results

### *Market reactions to Black CEOs*

Our univariate event study results begin in Table 2 panel A that reports one-sample *t*-tests for the mean 3-day CAR [-1, +1] for Black and White CEO appointment announcements using four separate measures of abnormal stock returns.<sup>2</sup> Of the 78 Black CEO announcements in the sample, 25 were contaminated while only 14 of the 78 White CEO announcements were contaminated. For Black CEOs, we find a positive mean CAR [-1, +1] of between 3.3% and 4.7% (*p*-values between .02 and .04) depending on the measure of abnormal returns used and whether the announcement is clean or contaminated. The sign, magnitude, and *p*-value of our results for Black CEOs support Hypothesis 3, and are consistent with Jeong et al. (2023), who reported a large 3.1% mean CAR [-1, +1] (*p*-value = .07). Our results do not support Hypothesis 1, and strongly differ from Gligor et al. (2021) who report a large -4.3% mean CAR [-1, +1] for Black CEO appointment announcements (*p*-value = .01). For our matched White CEOs, similar to the results found by Jeong et al. (2023) we observe small mean CAR [-1, +1] of between -0.9% and 0.4% (*p*-values between .24 and .59). Two-sample tests on the differences in the mean CAR [-1, +1] across our matched set of 78 Black and White CEOs per Table 2 panel B confirm that the mean CAR [-1, +1] for Black CEO appointment announcements is reliably larger than the mean CAR [-1, +1] for White CEO appointment announcements (*p*-values between .02 and .05).

Of key importance in our paper, panel C contains the results of our analyzing two alternative measures of central tendency, the median CAR [-1, +1] and the ratio of positive to

**Table 2**  
**Univariate tests of CAR [-1, +1] for matched sets Black and White chief executive officer appointment announcements**

Panel A: One-sample *t*-tests for mean CAR [-1, +1] using alternative measures of abnormal stock returns.

		Black CEOs All <i>n</i> = 78; clean <i>n</i> = 53			White CEOs All <i>n</i> = 78; clean <i>n</i> = 64		
		<i>M</i>	<i>t</i> -stat	<i>p</i> -value	<i>M</i>	<i>t</i> -stat	<i>p</i> -value
CAR market model	All announcements	3.3%	2.1	.04	-0.5%	-0.8	.46
	Clean announcements	4.7%	2.3	.02	0.4%	0.5	.59
CAR market-adjusted	All announcements	3.3%	2.1	.04	-0.5%	-0.6	.53
CAR FF 3 + mom	All announcements	3.4%	2.1	.04	-0.6%	-0.8	.43
CAR FF 5 + mom	All announcements	3.3%	2.1	.04	-0.9%	-1.2	.24

Panel B: Two-sample tests for differences in mean CAR [-1, +1] between matched Black and White CEOs.

		<i>t</i> -stat	<i>p</i> -value
CAR market model	All announcements	2.2	.03
	Clean announcements	2.0	.05
CAR market-adjusted	All announcements	2.2	.03
CAR FF 3 + mom	All announcements	2.3	.03
CAR FF 5 + mom	All announcements	2.4	.02

Panel C: Median CAR [-1, +1] and the proportions of positive versus negative CAR [-1, +1].

	Black CEOs		White CEOs	
	All announcements	Clean announcements	All announcements	Clean announcements
Median CAR [-1, +1]	1.0%	1.0%	0.0%	0.0%
Ratio of pos/neg CAR [-1, +1]	1.36	1.56	0.86	1.00
Binomial <i>z</i> -stat	1.36	1.47	-0.68	0.00
<i>p</i> -value	0.17	0.14	0.50	1.00

negative CAR [-1, +1]. We undertake this analysis because the magnitude and *p*-value of a mean stock price reaction have the potential to lead to fragile and/or misleading inferences about the central tendency of the distribution of individual CAR [-1, +1], as well as inferences that support or reject the predictions of theories that underlie the phenomena being studied (McWilliams & Siegel, 1997). We propose that for an empirical finding having to do with stock price reactions and its associated explanatory theory to be robust, it should be the case that multiple measures of the central tendency of the CAR [-1, +1] all yield the same inference, particularly for a topic that is as socially prominent and relevant to academic and management audiences as the appointments of Black CEOs. What we find, however, is that in sharp contrast to the sizes and *p*-values of the mean CAR [-1, +1] in panel A, the median stock price reactions to the announcements of both Black and White CEO appointments reported in panel C are close to zero in magnitude and have large

*p*-values: 1.0% for all Black CEO announcements (*p*-value = .17), 1.0% for clean Black CEO announcements (*p*-value = .14), 0.0% for all White CEO announcements (*p*-value = .50), and 0.0% for clean White CEO announcements (*p*-value > .99).<sup>3</sup>

In Table 3 we report the results of the two approaches we take to understanding why our mean CAR  $[-1, +1]$  results might yield different inferences from median CAR  $[-1, +1]$ , namely identifying the outliers, data points that deviate significantly from other data in the sample (Aguinis et al., 2013) that might cause the different inferences between mean and median CAR  $[-1, +1]$ . Gligor et al. (2021) make no mention of the presence or effects of any outliers on their results. Jeong et al. (2023) do recognize this possibility and address the potentially distortive effects of outliers by winsorizing the four most positive CAR  $[-1, +1]$  in their sample at the level of the largest 1% of CAR  $[-1, +1]$ . Based on their reported data, Jeong et al. (2023) winsorized their four most positive CAR  $[-1, +1]$  of 69.2%, 34.1%, 28.0%, and 27.9% down to 24.0%. In this winsorized sample, Jeong et al. (2023) found a 2.0% mean CAR  $[-1, +1]$  for all announcements (*p*-value = .09) and a 2.7% (*p*-value = .01) mean CAR  $[-1, +1]$  for the winsorized sample that excluded confounding events. The extreme CAR  $[-1, +1]$  values in the Jeong et al. (2023) sample were treated as *prediction outliers* that might be affecting the parameter estimates of their model (Aguinis et al., 2013). However, after winsorizing highly positive outliers, it did not change their inference that the mean CAR  $[-1, +1]$  is positive.

We used two approaches to understand and manage the outliers in our CEO dataset. First, following Jeong et al. (2023) we winsorized the most extreme values at the level of 1% of CAR  $[-1, +1]$  on either side of the distribution. The most extreme CAR  $[-1, +1]$  for Black CEOs are all positive: 69.9%, 52.2%, 33.1%, 28.2%, 26.5%, 25.4%, and 24.5%. These were winsorized to 24.5%. In contrast, the most extreme CAR  $[-1, +1]$  for White CEOs were both negative: -42.3% and -18.9%, which we winsorized to -18.9%. Our winsorized results, shown in columns 1–3 of Table 3, align with Jeong et al. (2023) in that we find a positive CAR  $[-1, +1]$  for Black CEOs, namely 2.4% (*p*-value = .02) for all Black CEO appointment announcements and 3.1% (*p*-value = .01) for clean Black CEO appointment

**Table 3**

**Univariate tests for matched sets of Black and White chief executive officer appointment announcements of CAR  $[-1, +1]$  for CEOs using alternative approaches**

	Winsorized CARs			CARs, nano-caps removed		
	<i>M</i>	<i>t</i> -stat	<i>p</i> -value	<i>M</i>	<i>t</i> -stat	<i>p</i> -value
Black CEOs—all announcements ( <i>n</i> = 78)	2.4%	2.4	.02	1.5%	1.3	.19
White CEOs—all announcements ( <i>n</i> = 78)	-0.5%	-0.8	.46	-1.2%	-1.9	.06
Black CEOs—clean announcements ( <i>n</i> = 53)	3.1%	2.8	.01	2.5%	2.7	.01
White CEO—clean announcements ( <i>n</i> = 64)	0.4%	0.5	.59	-0.4%	-0.6	.54
Two-sample tests—All announcements (Black CEOs vs White CEOs)		2.2	.03		2.1	.04
Two-sample tests—Clean announcements (Black CEOs vs White CEOs)		2.0	.05		2.6	.01

announcements. For White CEOs, winsorizing does not materially change the small size and high  $p$ -value of the mean CAR  $[-1, +1]$ .

Our second approach to managing the outliers in our sample aligns with the argument that outliers can contain “valuable or unexpected knowledge” (Aguinis et al., 2013, p. 275). Thus, we analyzed the outliers to see if we could better determine the nature of these outliers for the purpose of developing new theoretical propositions (Gibbert et al., 2021). Upon close inspection, we discovered that all the extreme positive CAR  $[-1, +1]$  outliers for Black CEOs occurred with nano-caps, that is, firms with a market capitalization of approximately \$50 million or less. This is notable because, due to a number of market factors, it is not uncommon for short-term stock returns for nano-cap firms to move in large magnitudes as compared to large-cap stocks (see discussion section for more details). As such, in our second approach, we assessed the impact of Black CEO appointment on CAR  $[-1, +1]$  of our sample with all nano-caps removed. The total number of nano-caps in the sample was 13, eight of which were Black CEOs. Thus, the sample of Black CEO announcements for this analysis was 70 total observations with 24 contaminated observations. The sample consists of 73 White CEO announcements, 14 of which were contaminated announcements. Shown in columns 4–6 of Table 3, the results of deleting nano-caps are that the mean CAR  $[-1, +1]$  for all Black CEO appointment announcements is 1.5% ( $p$ -value = .19) while the mean CAR  $[-1, +1]$  for only clean Black CEO appointment announcements is 2.5% ( $p$ -value = .01).

Taking the results in Table 3 in their totality, we arrive at two conclusions. First, neither winsorizing nor deleting nano-caps yields any evidence that the mean CAR  $[-1, +1]$  for Black CEO appointment announcements is negative (e.g., that discrimination is an explanatory mechanism for market returns for Black CEO appointment). Second, from a statistical point of view, three of the four mean CAR  $[-1, +1]$  in Table 3 are positive with small  $p$ -values. We therefore conclude that our dataset fails to provide support for Hypothesis 1, while offering partial support for Hypothesis 3. At the same time, however, we caution that the lack of consistency in the support for the higher bar theory that undergirds Hypothesis 3, seen in the small magnitude/high  $p$ -value median CAR  $[-1, +1]$  reported in Table 2 and the small magnitude/high  $p$ -value mean CAR  $[-1, +1]$  for all Black CEO appointment announcements after deleting nano-cap stocks, suggests that the higher bar theory might apply primarily to a subset of Black CEOs that are appointed at smaller market cap firms and not to all Black CEOs uniformly. In addition, the magnitudes of the extreme positive CAR  $[-1, +1]$  for Black CEOs are so large as to raise the likelihood that they are driven by factors other than those underlying the higher bar theory.

### *Market reactions to Black TMT executives*

In Table 4 we extend our analysis beyond CEOs to measure the stock price reactions to the announcements of Black TMTs. Gligor et al. (2021) reported a large negative  $-3.0\%$  mean CAR  $[-1, +1]$  for all announcements ( $p$ -value = .02). Moreover, while not reported by Gligor et al. (2021), it can be inferred from the fraction of positive to negative CAR  $[-1, +1]$  that they report that the median CAR  $[-1, +1]$  is also negative ( $z$ -statistic =  $-1.9$ ,  $p$ -value = .05).

Our analysis yields no evidence to support Hypothesis 2, running counter to the results presented in Gligor et al. (2021). For our set of Black TMTs ( $n = 101$ ; 62 contaminated announcements), we find mean CAR  $[-1, +1]$  of just  $0.3\%$  ( $p$ -value = .47) for all

**Table 4**  
**Univariate tests of CAR [-1, +1] for Black top management team (TMT) executives**

Panel A: One-sample *t*-test for mean CAR [-1, +1].

	Black TMTs		
	<i>M</i>	<i>t</i> -stat	<i>p</i> -value
All announcements <i>n</i> = 101	0.3%	0.7	.47
Clean announcements <i>n</i> = 39	0.2%	0.4	.66

Panel B: Median CAR [-1, +1] and the proportions of positive versus negative CAR [-1, +1].

	Black TMTs	
	All announcements <i>n</i> = 101	Clean announcements <i>n</i> = 39
Median CAR [-1, +1]	0.0%	0.0%
Ratio of pos/neg CAR [-1, +1]	0.74	1.05
Binomial <i>z</i> -stat	-1.49	0.16
<i>p</i> -value	0.14	0.87

announcements and 0.2% (*p*-value = .66) for announcements that exclude confounding events. We also find no evidence of nonzero effects for median CAR [-1, +1] in that median CAR [-1, +1] are 0.0% for all Black TMT announcements (*p*-value = .14) and 0.0% for clean Black TMT announcements (*p*-value = .87). However, we cautiously note that the effects of racial bias and/or higher bar perceptions within the market may not be detected for non-CEO TMT appointments since shareholder value is far more closely linked in sign and magnitude to the actions and decisions of a firm's CEO than any one TMT executive (Finkelstein et al., 2008).

### *Multivariate analyses*

We conducted a multivariate analysis of the individual mean CAR [-1, +1] to evaluate the proposition that the magnitudes of the extremely positive CAR [-1, +1] found for Black CEOs are so large as to raise the possibility that they are driven by factors other than those in the higher bar theory. In particular, because the glass cliff component of the racial bias theory proposes that Black CEOs are more likely to be appointed after poor recent firm performance, we include the prior year's annual return variable to control for this factor.

The approach we take is to first apply the multivariate structure found in Gligor et al. (2021) and Jeong et al. (2023) to our combined set of 78 matched Black and 78 White CEOs. Table 5 provides a correlation matrix of the control variables used in previous papers, CAR [-1, +1] measured in alternative ways, and the firm's prior year annual return.

Table 5 shows that the alternative measures of CAR [-1, +1] are all highly correlated (> 0.9), and that the 1/0 binary Black CEO appointment measure, Black CEO, is positively correlated with them. Black CEO is also positively correlated with RMSE and Beta, suggesting that the firms which appoint Black CEOs in our sample differ from the firms that appoint White

**Table 5**  
**Correlations and descriptive statistics for the Black and White CEO matched sample (N = 156)**

	M	SD	1	2	3	4	5	6	7	8	9	10
1	CAR market-adjusted	1.4%	11%									
2	CAR market model	1.4%	11%	0.99								
3	CAR FF 3 + mom	1.4%	11%	0.98	0.99							
4	CAR FF 5 + mom	1.2%	11%	0.97	0.98	0.99						
5	CAR winsorized market model	1.0%	8%	0.91	0.92	0.91	0.90					
6	BE	0.50	0.50	0.17	0.18	0.18	0.19	0.19				
7	RMSE	0.03	0.02	0.38	0.35	0.35	0.22	0.16				
8	Beta	1.07	0.50	0.03	0.02	0.03	-0.02	0.15	0.32			
9	Enterprise market-to-book	1.79	1.15	0.10	0.10	0.09	0.10	0.15	-0.03	-0.06	-0.02	
10	CEO age	51.4	7.3	0.05	0.05	0.03	0.02	0.05	0.09	-0.02	-0.05	-0.03
11	Female CEO	0.10	0.30	-0.06	-0.05	-0.06	-0.07	-0.06	0.00	-0.10	-0.09	-0.02
12	Industry insider	0.58	1.28	-0.02	-0.02	0.00	0.00	-0.01	-0.02	-0.07	-0.07	-0.02
13	Previous experience as CEO	0.37	1.28	-0.02	-0.03	-0.02	-0.03	-0.02	-0.08	-0.06	0.00	-0.05
14	Former CEO resigned	0.13	0.34	0.00	0.01	-0.02	-0.02	0.09	0.06	-0.03	-0.03	0.20
15	Firm size (in total assets)	7.59	2.21	-0.15	-0.13	-0.14	-0.14	-0.12	0.07	-0.44	0.00	-0.24
16	Institutional ownership %	37%	38%	-0.06	-0.07	-0.08	-0.09	-0.07	-0.03	0.00	0.12	-0.14
17	Return on sales	-7%	42%	-0.07	-0.09	-0.08	-0.08	-0.07	0.00	-0.30	-0.17	-0.09
18	Inside CEO	0.55	0.84	-0.05	-0.04	-0.03	-0.03	-0.04	-0.15	-0.10	0.09	-0.01
19	Prior year annual return	18%	93%	-0.15	-0.18	-0.21	-0.21	-0.19	-0.07	0.01	0.14	0.01

(continue)

**Table 5 (continued)**

	11	12	13	14	15	16	17	18
1 CAR market-adjusted								
2 CAR market model								
3 CAR FF 3 + mom								
4 CAR FF 5 + mom								
5 CAR winsorized market model								
6 BE								
7 RMSE								
8 Beta								
9 Enterprise market-to-book								
10 CEO age								
11 Female CEO								
12 Industry insider	0.09							
13 Previous experience as CEO	0.08	0.89						
14 Former CEO resigned	-0.01	-0.08	-0.06					
15 Firm size (ln total assets)	0.13	-0.08	-0.01	-0.06				
16 Institutional ownership %	0.08	-0.01	-0.02	0.16	-0.06			
17 Return on sales	0.06	-0.04	-0.01	-0.08	0.27	0.00		
18 Inside CEO	-0.02	0.39	0.44	0.01	0.10	0.03	0.10	
19 Prior year annual return	-0.05	-0.06	-0.07	-0.07	0.06	0.08	-0.03	-0.05

CEOs, consistent with the argument made by Gligor et al. (2021). Consistent with the glass cliff component of the racial bias theory, Black CEO is negatively correlated with prior year's annual return, indicating that firms that have experienced recent poor performance are more likely to hire a Black CEO.

Table 6 presents the regression results. In Model 1, which is limited to the control variables applied in both previously published papers, RMSE is the only regression coefficient with a small  $p$ -value, indicating that firms with more volatility in their stock returns leading up to the announcement of a new CEO see a larger increase in their stock price at the announcement than do less volatile firms, likely because the stock market expects the new CEO to lower the uncertainties that are creating the higher stock return volatility. However, when we include the Black CEO indicator variable in Model 2, its estimated coefficient is 2.8% ( $p$ -value = .11), differing from the reliably negative coefficient on Black CEO found by Gligor et al. (2021). Lastly, in Model 3 we include the prior year's annual return measure and find that its estimated coefficient is negative while the estimated coefficient on Black CEO is 2.3% ( $p$ -value = .20). Overall, the results of our multivariate analyses do not support either Hypothesis 1 (stereotype-based discrimination) or Hypothesis 3 (higher bar).

### *Addressing sample selection concerns*

One potential concern in our analysis is that appointing a Black CEO is not randomly assigned in that appointments of Black CEOs may systematically differ from appointments of White CEOs. For example, Table 6 shows that poor recent firm performance is reliably negatively related to CAR  $[-1, +1]$ . We seek to address the potential for sample selection

**Table 6**  
**OLS regressions predicting CAR [-1, +1] using the Black and White**  
**CEO-matched sample**

	Model 1	Model 2	Model 3
Intercept	-12% (-1.6)	-11% (-1.4)	-13% (-1.7)
Black CEO		2.8% (1.6)	2.3% (1.3)
Prior year annual return			-0.03 (-2.5)
RMSE	2.30 (4.6)	2.15 (4.2)	1.88 (3.7)
Beta	-0.024 (-1.3)	-0.029 (-1.5)	-0.026 (-1.4)
Enterprise market-to-book	0.013 (1.6)	0.013 (1.6)	0.014 (1.9)
CEO age	0.001 (0.7)	0.001 (0.5)	0.001 (0.8)
Female	-0.012 (-0.4)	-0.011 (-0.4)	-0.014 (-0.5)
Experience industry	0.005 (0.3)	-0.000 (-0.0)	0.004 (0.3)
Experience CEO	-0.004 (-0.3)	0.000 (0.02)	-0.005 (-0.3)
Former CEO resigned	0.001 (0.3)	-0.004 (-0.1)	-0.008 (-0.3)
ln total assets	0.004 (0.9)	0.003 (0.7)	0.004 (0.9)
Institutional ownership %	-0.010 (-0.4)	-0.008 (-0.4)	-0.001 (-0.0)
Return on sales	0.003 (0.1)	0.000 (0.0)	0.001 (0.1)
Inside CEO	0.001 (0.1)	0.004 (0.3)	0.003 (0.2)
# observations	156	156	156
Adj. R-sq	8.8%	9.7%	12.8%

*Note:* *t*-statistics are presented below the coefficient estimates.

bias affecting our results by conducting an instrumental variable regression, a standard method in organizational research that aims to create unbiased regression coefficient estimates (Semadeni et al., 2014). We address the problem of using a binary endogenous variable in the first stage followed by a continuous variable in the second stage (Wooldridge, 2010) following Adams et al. (2009). Specifically, we use the three-stage approach with a probit model in the first stage that models the determinants of Black CEO including instrumental variables, a least squares linear regression in the second stage that regresses Black CEO on the fitted value from the first stage and other control variables, followed by the third stage



ordinary least squares regression that regresses CAR on the fitted Black CEO from the second stage and control variables. As instruments we include variables that we propose may affect the appointment of Black versus White CEOs and not the residuals in the CAR regression (Wolfolds & Siegel, 2019). However, we caution that identifying variables that are exogenous to the system is challenging and that we may not have successfully identified valid instruments. The first instrumental variable we use is the nationality mix on the firm's Board of Directors, which was collected from BoardEx. Based on the finding that board demographics affect CEO hiring decisions (Zajac & Westphal, 1996), we expect more diverse boards to be more likely to hire a Black CEO. However, because CEOs make the day-to-day decisions for the company, we do not expect the board nationality mix to be associated with the announcement CAR. Next, we include whether the prior CEO resigned. We expect that the resignation of the prior CEO will give boards more influence over the CEO's hiring decision. Lastly, we use the firm's industry (per one-digit Standard Industrial Classification SIC codes) because the pool of available Black CEO candidates may differ by industry (Cook & Glass, 2014).

Table 7 Panel A presents the results from the first stage probit model of the determinants of Black CEOs. The three instruments are individually statistically weak with low z-values. However, the coefficient magnitudes suggest a meaningful effect on the probability of hiring a Black CEO. For example, for an observation with median values of all other variables, going from the lowest to the highest value of nationality mix increases the probability of hiring a Black CEO from less than 1% to 54% and being in the industry code "2" increases the probability of hiring a Black CEO from less than 1% to 59%. RMSE and total assets also have a strong association with hiring a Black CEO. Panel B presents the linear regression using the fitted Black CEO value from the second step. The test for instrument strength rejects the weak instruments' assumption ( $p$ -value < .01). We did not test for overidentification because there is only a single instrumental variable in the IV regression step, thus making the model "just-identified" and a test for overidentification is not warranted (Sargan, 1958). In Panel B, the coefficient on Black CEO is small ( $-0.03$ ,  $p$ -value = .65). Thus, and in a manner consistent with the ordinary regression results in Table 6, applying an instrumental variables approach also yields results that do not support Hypothesis 1 (stereotype-based discrimination) nor Hypothesis 3 (higher bar).

## Discussion and conclusions

In this article, we have conducted a quasi-replication of two recent studies that present conflicting results about the stock market reactions to the announcements of Black CEO and TMT appointments and make sharply different inferences about the underlying causal drivers. On the one hand, Gligor et al. (2021) report large negative  $-4.3\%$  and  $-3.0\%$  mean 3-day CAR  $[-1, +1]$  for Black CEOs and TMTs, from which they conclude that shareholders can develop biased performance expectations for firms, depending on the race of their newly appointed executives, and that their findings serve to raise further awareness regarding the undesirable consequences associated with racial discrimination. On the other hand, Jeong et al. (2023) find a large positive  $3.1\%$  mean CAR  $[-1, +1]$  for Black CEOs, leading them to report their results as evidence that any racial bias in the stock market is outweighed by the effects of the "higher bar" theory which proposes that investors may deem Black CEOs and

**Table 7**  
**Instrumental variable regression predicting CAR [-1, +1] using the Black and White CEO matched sample**

Panel A: Probit Black CEO determinants.

Dependent variable: Black CEO

	Estimated coef	z value
Intercept	-7.41	0.0
BoardEx nationality mix	0.90	1.2
Former CEO resigned	0.23	0.7
Industry sic "2"	5.03	0.0
Industry sic "3"	5.40	0.0
Industry sic "4"	5.25	0.0
Industry sic "5"	5.38	0.0
Industry sic "6"	5.02	0.0
Industry sic "7"	5.97	0.0
Industry sic "8"	6.53	0.0
Industry sic "9"	11.04	0.0
RMSE	16.83	2.0
Beta	0.32	1.2
Enterprise market-to-book	-0.03	-0.3
ln total assets	0.15	2.2
Institutional ownership %	0.02	0.1
Return on sales	0.00	0.0
# observations		156
AIC		210.8

Panel B: IV regression.

Dependent variable: CAR [-1, +1]

	Estimated coef	t-stat
Intercept	-0.06	-1.1
Black CEO (fitted)	-0.03	-0.5
RMSE	2.39	4.0
Beta	-0.03	-1.3
Enterprise market-to-book	0.01	1.4
ln total assets	0.00	0.7
Institutional ownership %	-0.01	-0.6
Return on Sales	0.00	0.1
# observations		156
Adj-R squared		0.07

Note: Weak instruments test  $t$ -stat = 13.2,  $p$ -value < .01.

TMTs especially talented for having outperformed to such an extent as to be appointed to the level of CEO or TMT.

In light of the conflicting empirical results and theoretical conclusions of these two prior studies, we conducted a quasi-replication analysis on an independently collected dataset of a

matched sample of 78 Black and White CEOs, and 101 Black TMTs, all appointed between 2000 and 2020. In doing so, we found a positive mean CAR  $[-1, +1]$  for Black CEO announcements, lending support to the “higher bar” theory proposed by Jeong et al. (2023). We did not find any evidence of racial stereotype discrimination of the kind proposed by Gligor et al. (2021). However, running counter to the negative mean CAR  $[-1, +1]$  reported by Gligor et al. (2021) for Black TMT appointments, we found effectively zero mean and median CAR  $[-1, +1]$  for our sample of Black TMTs.

Our analysis demonstrates a lack of robustness in the inferences made by Gligor et al. (2021) and Jeong et al. (2023) as to the central tendency of stock price reactions to the announcements of Black executive appointments. Indeed, based on data reported in their studies, the median CAR  $[-1, +1]$  for Black CEOs is also not reliably different from zero in the datasets of Gligor et al. (2021) and Jeong et al. (2023). After close inspection, we found that all of the positive outliers in the dataset were from a small number of nano-cap stocks. We believe that these nano-cap stocks play a key role in the size and  $p$ -value of the mean CAR  $[-1, +1]$ . It seems unlikely, however, that these extremely positive nano-cap stock price reactions are explained by racial discrimination or higher bar theorizing, given the general volatility of nano-cap stocks where double and triple-digit short-term returns are not uncommon (Eraker & Ready, 2015; Zaremba, 2015). Research on financial markets suggests a number of factors for this volatility. Nano-caps have a high real rate of being delisted (Macey et al., 2008), are often the target of pump-and-dump schemes (Allen & Gale, 1992), have very low trading liquidity (Jiang et al., 2016), are not as tightly regulated as larger cap stocks (Cumming & Johan, 2013), and present very high bid-ask spreads because of extreme information asymmetry between managers and investors (Luft & Levine, 2004). Any of these factors could be moderating the effect between CEO race and stock market reaction which can serve as the inspiration for new potential future directions of research in this area.

Finally, we found immaterial effects for Black CEOs using multivariate regression analysis of the individual CAR  $[-1, +1]$  in our matched Black and White CEO dataset. We also failed to find material effects for Black CEOs when we included prior year stock performance in the regression estimation (a control variable that was not used in previous papers). In this regard, our multivariate regression findings are inconsistent with both the higher talent bar and racial stereotype discrimination theories, and instead align more closely with the conclusions of the broader research into the stock market reactions to CEO succession events (Friedman & Singh, 1989)—namely that markets generally react negatively to strong performing firms that appoint a new CEO, and that this effect occurs for both White and Black CEOs.

The totality of our findings leads us to conclude that conventional mean stock price reactions on their own are not robust indicators when testing theories about how markets interpret executive leadership demographics. These theories include the idea that investors are racially biased against Black CEOs and TMTs (Gligor et al., 2021), either per se or for glass cliff reasons; the theory that investors believe Black CEOs exhibit exceptional attributes (Jeong et al., 2023); and the argument that the appointment of a Black CEO a visible, positive and credible reputational signal to the stock market that the firm is an equitable and inclusive organization that does not racially discriminate, thereby leading to predicted superior firm performance.

Stock market participants place a strong significance on the importance that a CEO has regarding the value of the firm (Quigley et al., 2017). In light of the increased dialogue in the academic and corporate arenas around the causes and consequences of executive and employee racial and ethnic diversity (Andrevski et al., 2014; Smulowitz et al., 2019), corporate boards (Westphal & Milton, 2000), and how academia has investigated these topics (Roberson, 2019), the results of our paper lead us to recommend that future research in the area of Black top executives be suitably cautious when presenting and interpreting its results. In particular, we propose that a robust empirical analysis of the stock price reactions pertaining to announcements pertaining to CEOs and their characteristics should include multiple measures of the central tendency of the CAR  $[-1, +1]$  and demonstrate that they all yield the same inference. This kind of approach would seem to be particularly appropriate for topics that are as socially prominent and relevant to academic and management audiences as the appointments of Black CEOs. Such steps seem promising avenues to pursue in the goal of achieving a greater understanding of how and why capital markets react to CEO demographic characteristics.

### Data availability

Data are available from the sources cited in the text


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### Notes

1. By match for the event year, we mean within one year before or after the Black CEO announcement date.
2. Because our findings do not materially depend on the abnormal stock return measure used, we report the remainder of our results using abnormal returns calculated using the market model, following Gligor et al. (2021) and Jeong et al. (2022).
3. We assess the  $p$ -value of median CAR  $[-1, +1]$  using the binomial  $z$ -statistic that tests if the fraction of positive individual CAR  $[-1, +1]$  is different from 50%.

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**Appendix A: Executive appointment announcements used in this study.**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
John	Agwunobi	Herballife Nutrition	10/29/2019	14269	90516	CEO	1	0	0	0
Victor	Alston	Ixia	3/19/2012	140759	88750	CEO	1	0	0	0
Craig	Arnold	Eaton	8/24/2005	4199	11762	CEO	1	0	0	0
James	Bell	Boeing Company	3/7/2005	2285	19561	CEO	1	0	1	0
Byron	Boston	Dynex Capital	12/12/2013	14403	75269	CEO	1	0	0	0
Ursula	Burns	Xerox	5/21/2009	11636	27983	CEO	1	1	0	1
Ursula	Burns	Veon Ltd	12/13/2018	63987	93337	CEO	1	0	0	1
Lloyd	Carney	Brocade Communications Systems	1/14/2013	120774	86881	CEO	1	0	0	0
Matthew	Carter	Inteliquent Inc	6/6/2015	178767	92454	CEO	1	0	0	0
Anthony	Coles	NPS Pharmaceuticals	5/12/2006	30255	80560	CEO	1	1	0	0
Leonard	Comma	Jack in the Box	8/7/2013	13092	77453	CEO	1	0	0	0
Nathaniel	Davis	K12, Inc	2/13/2018	178976	92493	CEO	1	0	0	0
Steven	Davis	Bob Evans Farms	5/2/2006	2282	18570	CEO	1	0	0	0
Ken	Denman	Openwave Systems	11/6/2008	121257	86990	CEO	1	0	0	0
Arnold	Donald	Camival & plc	6/24/2013	13498	89728	CEO	1	0	0	0
Marvin	Ellison	J.C. Penney	10/13/2014	8446	18403	CEO	1	0	0	0
Marvin	Ellison	Lowe's Companies	5/22/2018	6829	61399	CEO	1	0	0	0
Michael	Fields	Kana Software	8/26/2005	123998	87241	CEO	1	0	0	0
Kenneth	Frazier	Merck	11/30/2010	7257	22752	CEO	1	0	0	0
William	Freeman	Arbnet-thexchange	11/19/2007	160867	90469	CEO	1	0	0	0
James	Gavin	Microslet Inc	6/9/2006	141196	90212	CEO	1	0	0	0
James	Gavin	Microslet Inc	1/19/2006	141196	90212	CEO	1	0	1	0
Joel	Gay	Energy Recovery	4/24/2015	179738	92753	CEO	1	0	0	0
Kim	Goodman	Worldpay	9/28/2016	194956	13314	CEO	1	0	0	1
Leslie	Hale	RLJ Lodging Trust	4/10/2018	186363	12756	CEO	1	1	1	1
Brett	Hart	United Airlines	10/19/2015	10795	91103	CEO	1	0	1	0
Richard	Holder	NN, Inc.	5/10/2013	29894	80343	CEO	1	0	0	0
Rene	Jones	M&T Bank	12/20/2017	4699	35554	CEO	1	1	0	0
Eric	Kelly	Overland Storage Inc	1/28/2009	64408	84555	CEO	1	0	0	0

(continued)

**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Theo	Killion	Zale Corporation	9/23/2010	11669	79672	CEO	1	0	0	0
Theo	Killion	Zale Corporation	1/13/2010	11669	79672	CEO	1	0	1	0
Kase	Lawal	CAMAC Energy Inc	4/12/2011	178878	93106	CEO	1	1	0	0
Aylwin	Lewis	Kmart Holding Corp	10/18/2004	6307	89757	CEO	1	0	0	0
Aylwin	Lewis	Sears Holdings Corporation	9/8/2005	6307	89757	CEO	1	0	0	0
François	Locoh-Donou	F5 Networks	1/31/2017	121077	86964	CEO	1	0	0	0
Shaun	McAlmont	Lincoln Educational Services Corporation	1/21/2009	163668	90735	CEO	1	1	0	0
Ronald	McCray	Career Education Corporation	2/12/2015	66379	85724	CEO	1	0	1	0
Gary	McCullough	Career Education	3/7/2007	66379	85724	CEO	1	0	0	0
Stanley	O'Neal	Merrill Lynch	7/22/2002	7267	52919	CEO	1	1	0	0
William	Osborne	Federal Signal Corporation	9/15/2008	4608	47706	CEO	1	0	0	0
Clarence	Otis	Darden Restaurants	8/12/2004	31846	81655	CEO	1	1	0	0
Sam	Owusu-Akyaw	Osteotech	11/23/2005	24198	76710	CEO	1	0	0	0
Richard	Parsons	Time Warner	12/5/2001	120359	86926	CEO	1	1	0	0
Gregory	Pratt	Carpenter Technology Corporation	11/14/2014	2787	20618	CEO	1	0	0	0
Gregory	Pratt	Carpenter Technology Corporation	10/12/2009	2787	20618	CEO	1	0	1	0
Michael	Pugh	Carver Bancorp	11/17/2014	30857	80960	CEO	1	0	0	0
Derica	Rice	Eli Lilly and Co.	5/6/2013	6730	50876	CEO	1	1	1	0
James	Sweetnam	Dana Holding Corporation	5/27/2009	3734	92570	CEO	1	0	0	0
Tidjane	Thiam	Credit Suisse Group	3/9/2015	28838	89154	CEO	1	0	0	0
Donald	Thompson	McDonald's	1/11/2010	7154	43449	CEO	1	1	0	0
Lisa	Wardell	DeVry Education Group	5/24/2016	3905	76708	CEO	1	1	0	1
Gene	Warren	ACT Teleconferencing	12/17/2003	62649	83347	CEO	1	0	0	0
James	White	Jamba Juice	11/18/2008	164255	90795	CEO	1	1	0	0
Ronald	Williams	Aetna	1/4/2006	1177	88845	CEO	1	1	0	0
Mary	Winston	Bed Bath & Beyond	5/13/2019	25338	77659	CEO	1	0	1	1
RL	Wood	Crompton	1/12/2004	3607	38420	CEO	1	0	0	0
Jide	Zeitlin	Tapestry Inc	9/4/2019	140541	88661	CEO	1	1	0	0
Keith	Alessi	Westmoreland Coal Company	5/2/2007	11440	59467	CEO	0	1	1	0

(continued)



**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Keith	Alessi	Westmoreland Coal Company	1/27/2009	11440	59467	CEO	0	0	0	0
Bradbury	Anderson	Best Buy	2/25/2002	2184	85914	CEO	0	0	0	0
Sherry	Bahrambeygui	PriceSmart	1/31/2019	65343	85394	CEO	0	1	0	1
Michael	Barry	Quaker Chemical Corporation	5/7/2008	8850	64929	CEO	0	1	0	0
Todd	Becker	Green Plains Renewable Energy	12/22/2008	166576	91161	CEO	0	0	0	0
Friedhelm	Blobel	Sciclone Pharmaceuticals	4/24/2006	25047	77413	CEO	0	0	0	0
Mark	Capone	Myriad Genetics	2/3/2015	61399	82508	CEO	0	0	0	0
Greg	Carmichael	Fifth Third Bancorp	7/8/2015	4640	34746	CEO	0	0	0	0
Steven	Cosse	Murphy Oil Corporation	6/20/2012	7620	28345	CEO	0	0	0	0
Patrick	Coyne	Delaware Investments Dividend and Income Fund	8/1/2006	27963	79036	CEO	0	0	0	0
Alec	Cunningham	Wellcare Health Plans	12/21/2009	260778	90272	CEO	0	0	0	0
Joseph	Darling	Anika Therapeutics	3/5/2018	28209	79150	CEO	0	0	0	0
David	Dickson	Medermott International	10/17/2013	7152	64629	CEO	0	1	0	0
Brian	Driscoll	Snyder s-Lance	4/17/2017	6574	48531	CEO	0	1	1	0
Thomas	Edman	TTM Technologies	10/30/2013	139804	88648	CEO	0	0	0	0
Michael	Eskew	United Parcel Service	8/16/2001	10920	87447	CEO	0	0	0	0
Donald	Felsing	Sempra Energy	12/7/2005	8272	86136	CEO	0	0	0	0
Olivier	Filliol	Mettler-Toledo International	11/1/2007	65772	85621	CEO	0	0	0	0
Larry	Franklin	Harte-Hanks, Inc	12/15/2008	12545	79903	CEO	0	0	1	0
Scott	Freidheim	CDI Corporation	8/13/2014	2538	45655	CEO	0	0	0	0
Andrew	Gatto	Russ Berrie and Co.	4/12/2004	9289	66050	CEO	0	1	0	0
John	Gibson	ONEOK, Inc.	11/16/2006	8151	25232	CEO	0	1	0	0
Shira	Goodman	Staples, Inc.	9/26/2016	15521	75489	CEO	0	0	0	1
Jeffrey	Harmering	General Mills	5/3/2017	5071	17144	CEO	0	0	0	0
Lawrence	Hebert	Riggs National Corporation	3/9/2005	9142	66967	CEO	0	0	0	0
Bradley	Jacobs	XPO Logistics	9/2/2011	144998	90175	CEO	0	1	0	0
Nicholas	Konidaris	Electro Scientific Industries	1/7/2004	4274	32054	CEO	0	0	0	0
Michael	Lamach	Ingersoll-Rand PLC	2/4/2010	5959	12431	CEO	0	0	0	0
Michael	Macdonald	Medifast, Inc.	2/2/2012	29517	80054	CEO	0	0	0	0

(continued)

**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Christopher	Martin	Provident Financial Services	2/27/2009	150279	89653	CEO	0	0	0	0
Joseph	McGrath	Unisys Corporation	10/22/2004	2504	10890	CEO	0	0	0	0
C. Douglas	McMillon	Wal-Mart Stores	11/25/2013	11259	55976	CEO	0	0	0	0
Norman	Miller	Conn's, Inc.	9/9/2015	156614	89908	CEO	0	1	0	0
Max	Mitchell	Crane Co.	4/22/2013	3580	20204	CEO	0	0	0	0
Gregg	Mollins	Reliance Steel & Aluminum Co.	3/2/2015	30671	80864	CEO	0	1	0	0
William	Morrow	Clearwire Corporation	3/9/2009	174579	91892	CEO	0	0	0	0
Daniel	O'Day	Gilead Sciences	12/9/2018	24856	77274	CEO	0	0	0	0
Kelly	Ortberg	Rockwell Collins	4/19/2013	144066	89014	CEO	0	0	0	1
Andrea	Owen	Herman Miller	8/15/2018	7401	54114	CEO	0	0	0	1
Gerald	Perkel	Planar Systems, Inc.	9/26/2005	29435	80012	CEO	0	0	0	0
Michael	Plinski	Rudolph Technologies	11/9/2015	126423	87415	CEO	0	0	0	0
Patrick	Ramsey	Multimedia Games	3/15/2010	62107	83529	CEO	0	0	1	0
Patrick	Ramsey	Multimedia Games	9/20/2010	62107	83529	CEO	0	0	0	0
Darren	Rebelez	Casey's General Stores	6/5/2019	2807	21742	CEO	0	0	0	0
Jeffrey	Sanfilippo	John B. Sanfilippo & Son	5/11/2006	24755	77165	CEO	0	0	0	0
Alan	Schmitzer	The Travelers Companies	8/4/2015	62689	59459	CEO	0	0	0	0
C. Randall	Sims	Home BancShares	7/17/2009	164633	91356	CEO	0	0	0	0
Michael	Strianese	L-3 Communications Holdings	6/9/2006	13440	85991	CEO	0	1	1	0
William	Stromberg	T. Rowe Price Group	5/6/2015	12138	10138	CEO	0	1	0	0
Joseph	Sullivan	Legg Mason	2/8/2013	6653	65330	CEO	0	0	0	0
Nigel	Travis	Papa John's International	1/31/2005	28397	79299	CEO	0	0	0	0
Brian	Vance	Heritage Financial Corporation	9/22/2006			CEO	0	0	0	0
Kenneth	Vecchione	Encore Capital Group	4/8/2013	121815	87077	CEO	0	0	0	0
Emma	Walmsley	GlaxoSmithKline	9/20/2016	5180	75064	CEO	0	0	0	1
Cynthia	Warner	Renewable Energy Group	12/6/2018	187692	13201	CEO	0	0	0	1
Kevin	Wilson	Heska Corporation	3/27/2014	65011	85187	CEO	0	0	0	0
John	Hall	Independence Federal Savings Bank	6/2/2007	16888	88891	CEO	1	1	0	0
Lonnell	Coats	Lexicon Pharmaceuticals Inc	7/8/2014	133868	88173	CEO	1	0	0	0
David	Rawlinson	Qurate Retail Inc	7/13/2021	174147	91278	CEO	1	1	0	0

(continued)

**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Lloyd	Yates	NiSource	1/28/2022	7974	38762	CEO	1	1	0	0
Stephen	Beard	Adtalem Global Education	8/4/2021	3905	76708	CEO	1	0	0	0
Marvin	Riley	EnPro Industries Inc	3/12/2019	148950	89406	CEO	1	1	0	0
Sam	Solomon	EveryWare Global Inc	6/9/2014	170327	13378	CEO	1	0	0	0
Michael	Dinkins	Access Worldwide Communications Inc	7/30/1999	66454	85807	CEO	1	1	0	0
Christopher	Womack	Georgia Power	5/26/2021	9850	18411	CEO	1	0	0	0
Clinton	Lewis	AgroFresh Solutions Inc	4/12/2021	19525	14590	CEO	1	1	0	0
Rahsan-Rahsan	Lindsay	MediaCo Holding Inc	6/11/2021	35583	19129	CEO	1	0	0	0
Dwight	Gibson	BlueLinx Holdings Inc	4/22/2021	161813	90496	CEO	1	0	0	0
Clifford	Alexander	Dun & Bradstreet	10/26/1999	4094	48506	CEO	1	1	1	0
Barry	Rand	Avis Rent A Car	11/9/1999	65056	85331	CEO	1	0	0	0
Anthony	Coles	Onyx Pharmaceuticals Inc	2/26/2008	62826	83541	CEO	1	0	0	0
Priscilla	Sims Brown	Amalgamated Financial Corp	5/11/2021	33625	18043	CEO	1	0	0	1
Hansel	Tookes	Raytheon	9/8/1999	8972	24942	CEO	1	1	0	0
Lloyd	Ward	Maytag	5/13/1999	7139	13119	CEO	1	1	0	0
John	Thompson	Symantec	4/14/1999	15855	75607	CEO	1	0	0	0
Rosalind	Brewer	Walgreens	1/26/2021	11264	19502	CEO	1	0	0	1
Kenneth	Chenault	American Express	4/27/1999	1447	59176	CEO	1	1	0	0
Steven	Hanson	Inplay Technologies	7/2/2007	66275	87138	CEO	0	0	0	0
Chris	Homeister	Tile Shop Holdings	10/28/2014	13861	13563	CEO	0	0	0	0
John	Weinberg	Evercore	10/27/2021	174744	91413	CEO	0	0	0	0
Devin	McGranahan	Western Union	11/15/2021	175263	91461	CEO	0	0	0	0
James	Mullen	Editas Medicine	2/8/2021	26874	15937	CEO	0	0	0	0
William	Higgins	Albany International Corp	1/21/2020	14084	11731	CEO	0	0	0	0
William	Petropulus	First West Virginia Bancorp, Inc	3/27/2015	31593	81298	CEO	0	0	0	0
Robert	Thomas	Charles & Colvard	7/17/2000	65850	85539	CEO	0	0	0	0
Dean	Klisura	Marsh & McLennan	11/18/2021	7065	45751	CEO	0	0	0	0
Daniel	Thoren	Graham Corporation	8/10/2021	5254	60468	CEO	0	0	0	0
Thomas	Bumell	Interpace Biosciences	11/25/2020	110728	86083	CEO	0	0	0	0

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**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Mark	Filanowski	Pangaea Logistics Solns	12/14/2021	21904	14353	CEO	0	0	0	0
Bruce	Nelson	Office Depot	7/18/2000	14624	75573	CEO	0	0	0	0
Philip	Hadley	Factset Research Systems	9/5/2000	63172	83597	CEO	0	0	0	0
Timothy	Frank	Conns	6/3/2008	156614	89908	CEO	0	1	0	0
Laura	Francis	Si-BONE	1/7/2021	34193	18212	CEO	0	0	0	1
Jozef	Straus	Jds Uniphase	5/18/2000	29241	79879	CEO	0	0	0	0
Francis	Sericco	Arrow Electronics	5/10/2000	1773	29209	CEO	0	0	0	0
David	Kyle	Oneok Inc	8/29/2000	8151	25232	CEO	0	0	0	0
Sheila	Harrington	Urban Outfitters	10/14/2020	29150	79881	CEO	0	1	0	1
Roger	King	Cbs	1/9/2000	13714	75104	CEO	0	0	0	0
Brian	Anderson	OfficeMax	11/11/2004	2290	42024	TMT	1	0		0
Craig	Arnold	Eaton	1/28/2009	4199	11762	TMT	1	1	1	0
Wendel	Barr	Covance	12/19/2007	64162	84364	TMT	1	1	1	0
James	Bell	Boeing	1/6/2004	2285	19561	TMT	1	0		0
Marc	Belton	General Mills	5/3/2005	5071	17144	TMT	1	1	1	0
Marc	Belton	General Mills	5/4/2006	5071	17144	TMT	1	1	1	0
Alicia	Boler Davis	General Motors	6/9/2016	5073	12369	TMT	1	1	1	1
Audrey	Boone Tillman	Aflac	5/5/2014	1449	57904	TMT	1	1	1	1
Donald	Brown	NiSource	3/24/2015	7974	38762	TMT	1	1	1	0
Marcus	Brown	Entergy	1/31/2012	7366	24010	TMT	1	1	1	0
Harvey	Brownlee	Bob Evans Farms	1/21/2009	2282	18570	TMT	1	1	1	0
Glynis	Bryan	Insight Enterprises	11/19/2007	31453	81220	TMT	1	0		1
Ursula	Burns	Xerox	4/3/2007	11636	27983	TMT	1	0		1
Eric	Butler	Union Pacific	11/17/2016	10867	48725	TMT	1	1	1	0
Eric	Butler	Union Pacific	3/15/2012	10867	48725	TMT	1	1	1	0
Ann-Marie	Campbell	Home Depot	1/9/2016	5680	66181	TMT	1	0		1
Angelique	Carbo	Selective Insurance Group	3/3/2016	17115	68292	TMT	1	1	1	1
Edward	Chaplin	MBIA	5/30/2006	13561	75175	TMT	1	1	1	0
Frank	Clark	Exelon	10/2/2001	8539	21776	TMT	1	1	1	0
Alexander	Cummings	Coca-Cola	7/17/2008	3144	11308	TMT	1	1	1	0

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**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Jeffrey	Davis	J.C. Penney	7/25/2017	8446	18403	TMT	1	0		0
Martin	Davis	Wachovia	2/10/2003	4739	36469	TMT	1	0		0
Willie	Deese	Merck	5/25/2005	7257	22752	TMT	1	0		0
Jerri	DeVard	Office Depot	9/14/2017	14624	75573	TMT	1	0		1
Verona	Dorch	Peabody Energy	8/4/2015	142460	88991	TMT	1	0		1
Troy	Ellis	Domino's Pizza	6/30/2015	160211	90248	TMT	1	1		0
Marvin	Ellison	Home Depot	8/25/2008	5680	66181	TMT	1	1		0
Forest	Farmer	Chrysler	8/30/1988	3022	11260	TMT	1	1		0
Rhonda	Ferguson	Union Pacific	6/7/2016	10867	48725	TMT	1	0		1
Darrell	Ford	Xerox	11/2/2015	11636	27983	TMT	1	0		0
Kenneth	Frazier	Merck	7/27/2007	7257	22752	TMT	1	1		0
Linda	Gooden	Lockheed Martin	12/7/2006	6774	21178	TMT	1	1		1
Kim	Goodman	American Express	7/12/2007	1447	59176	TMT	1	0		1
Mirian	Graddick	AT&T	2/12/1999	9899	66093	TMT	1	1		1
Sylvester	Green	Chubb & Son	9/16/1998	3024	59192	TMT	1	0		0
Kimberley	Harris	Comcast	7/16/2013	3226	89565	TMT	1	1		1
Paul	Harris	KeyCorp	2/3/2003	9783	64995	TMT	1	1		0
Rejji	Hayes	CMS Energy	5/1/2017	3439	23229	TMT	1	1		0
Bridgette	Heller	Merck	2/16/2010	7257	22752	TMT	1	1		1
Dennis	Hightower	Walt Disney	9/24/1990	3980	26403	TMT	1	1		0
Yvette	Hollingsworth	Wells Fargo	5/14/2012	8007	38703	TMT	1	0		1
Phillip	Holloman	Cintas	1/19/2008	3062	23660	TMT	1	0		0
Duane	Holloway	Ascena Retail Group	1/18/2016	4072	30737	TMT	1	0		0
Jamere	Jackson	Nielsen Holdings plc	2/24/2014	100873	12542	TMT	1	1		0
John	Jacob	Anheuser-Busch	6/6/1994	1663	59184	TMT	1	0		0
Lisa	Jeffries Caldwell	Reynolds American	5/21/2008	120877	86946	TMT	1	1		1
Joia	Johnson	Hanesbrands	1/11/2007	175319	91416	TMT	1	0		1
Nicole	Jones	Cigna	5/25/2010	2547	64186	TMT	1	0		1
Michelle	Lee	Wells Fargo	10/16/2014	8007	38703	TMT	1	1		1
Clinton	Lewis	Zoetis	5/7/2015	13721	13788	TMT	1	1		0

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**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permno	ExecType	BE	Confounded	Interim	Female
Freda	Lewis-Hall	Pfizer	5/4/2009	8530	21936	TMT	1	0		1
Mark	Mason	Citigroup	9/7/2006	3243	70519	TMT	1	1		0
George	Mayes	Diebold	4/27/2006	3946	40440	TMT	1	1		0
Antoinette	McCorvey	Eastman Kodak	10/12/2010	4194	11754	TMT	1	1		1
Lawrence	McRae	Corning	10/7/2010	3532	22293	TMT	1	1		0
Raymond	Mines	McDonald's	9/28/1998	7154	43449	TMT	1	0		0
Harold	Morrison	Chubb	6/19/2008	3024	59192	TMT	1	1		0
Harold	Morrison	Chubb	10/21/2010	3024	59192	TMT	1	1		0
Vanessa	Morrison	20th Century Fox	10/30/2017	12886	90441	TMT	1	0		1
Richard	Nanula	Walt Disney	8/29/1991	3980	26403	TMT	1	1		0
George	Neale	Selective Insurance Group	5/12/2015	17115	68292	TMT	1	1		0
Momar	Ngur	Total S.A.	3/18/2016	24625	77078	TMT	1	1		0
Stanley	O'Neal	Merrill Lynch	2/4/1998	7267	52919	TMT	1	1		0
Vicki	Palmer	Coca-Cola	1/13/2004	3144	11308	TMT	1	1		1
Herbert	Parker	Harman International	5/7/2008	12788	75224	TMT	1	1		0
Herbert	Parker	Harman International	5/6/2008	12788	75224	TMT	1	1		0
Richard	Parsons	Time Warner	10/31/1994	10576	40483	TMT	1	0		0
Angelia	Pelham	Cinemark Holdings	1/15/2016	177108	91915	TMT	1	0		1
Charles	Phillips	Oracle	1/13/2004	12142	10104	TMT	1	1		0
William	Plummer	United Rentals	11/24/2008	66065	85663	TMT	1	1		0
Barry	Rand	Xerox	2/4/1992	11636	27983	TMT	1	1		0
Derica	Rice	Eli Lilly	12/18/2009	6730	50876	TMT	1	0		0
Derica	Rice	Eli Lilly	2/23/2006	6730	50876	TMT	1	1		0
Michael	Smith	Huntington Ingalls Industries	10/30/2015	186310	12623	TMT	1	1		0
Susan	Somersville Johnson	SunTrust Banks	8/5/2014	10187	68144	TMT	1	0		1
Denis	Suggs	Belden	6/14/2007	28940	79668	TMT	1	0		0
Scott	Taylor	Symantec	8/1/2008	15855	75607	TMT	1	1		0
Shundrawn	Thomas	Northern Trust	5/28/2014	7982	58246	TMT	1	1		0
Michael	Todman	Whirlpool	3/25/2001	11465	25419	TMT	1	0		0
Tracey	Travis	Estee Lauder	7/18/2012	61567	82642	TMT	1	0		1

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**Appendix A (continued)**

First	Last	Company	AnnDate	gvkey	permo	ExecType	BE	Confounded	Interim	Female
Tracy	Travis	Polo Ralph Lauren	11/20/2004	64891	85072	TMT	1	1		1
Tracy	Travis	Estee Lauder	7/18/2012	61567	82642	TMT	1	0		1
Michael	Triplet	Cigna	2/23/2017	2547	64186	TMT	1	1		0
Michael	Tucker	Avis Budget Group	4/22/2010	3278	25487	TMT	1	0		0
Reed	Tuckson	UnitedHealth Group	9/16/2000	10903	92655	TMT	1	0		0
Kellye	Walker	Huntington Ingalls Industries	12/17/2014	186310	12623	TMT	1	1		1
Kathy	Waller	Coca-Cola	2/20/2014	3144	11308	TMT	1	1		1
Laysha	Ward	Target	12/17/2014	3813	49154	TMT	1	1		1
Kevin	Warren	Xerox	12/7/2016	11636	27983	TMT	1	1		0
Robin	Washington	Gilead Sciences	4/21/2008	24856	77274	TMT	1	0		1
Jeffrey	Weaver	KeyCorp	7/5/2005	9783	64995	TMT	1	0		0
Mary Beth	West	Kraft Foods	10/29/2007	142953	89006	TMT	1	0		1
Roderick	West	Entergy	6/7/2010	7366	24010	TMT	1	1		0
Teresa	White	Aflac	9/29/2014	1449	57904	TMT	1	1		1
Amé	Williams	American Express	11/4/2011	1447	59176	TMT	1	1		0
Felicia	Williams	Macy's	1/15/2016	4611	77462	TMT	1	1		1
Xavier	Williams	AT&T	10/12/2017	9899	66093	TMT	1	0		0
Kathleen	Wilson-Thompson	Walgreens Boots Alliance	11/23/2009	11264	19502	TMT	1	1		1
Mary Beth	Winston	Family Dollar Stores	4/10/2012	4560	53866	TMT	1	1		1
Christopher	Womack	Southern Company	12/22/2008	9850	18411	TMT	1	0		0
Teresa	Wynn Roseborough	Home Depot	10/7/2011	5680	66181	TMT	1	0		1