Regulatory Enforcement and CEO Race: Evidence from IRS Attention*

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Abstract

Using a proxy for regulatory enforcement activity validated in prior literature, IRS attention, we examine whether enforcement activity varies with CEO race. We find significantly higher IRS attention for Black-CEO led firms than similar White-CEO led firms, but similar or lower tax aggressiveness. Higher IRS resources reduce the attentional difference, consistent with implicit bias. Results are robust using an instrumental variables approach or an alternate measure of IRS enforcement. Higher attention leads to more audits. However, tax settlements are no higher, suggesting that the difference is not collection-driven. Our results point to a significant race-related implicit bias in enforcement activity.

Keywords: CEO Race, Monitoring, Enforcement, Attention, Implicit Bias, IRS

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1. Introduction

CEO personal characteristics, including factors such as cultural heritage and childhood experiences, are increasingly being shown to be predictive of investment decisions, risk-taking, company performance, and corporate culture (e.g., Davidson, Dey and Smith 2015; Bernile, Bhagwat and Rau 2017; Nguyen, Hagendorff, and Eshraghi 2018; Duchin, Simutin and Sosyura 2021). This creates a tension. Considering CEO personal characteristics can create an opening to overweight easily identifiable characteristics such as race and gender, allowing biases to come into play. We focus on a specific potential bias: race-related bias, whether conscious or unconscious/implicit.[1] Despite the general decline in race-related biases in the United States over the last several decades, research suggests that significant biases remain, for example in employment, housing, and credit markets (e.g., Pager and Shepherd 2008).

While it is plausible that race-related biases will affect all market participants, we focus on regulatory enforcement agencies in this paper, in particular, the IRS. A large body of research provides evidence that biases such as overconfidence, narcissism, and loss aversion significantly impact managers, however little research has examined the impact of behavioral biases on third parties which impact firms, particularly regulatory and enforcement agencies (Malmendier 2018; Hanlon, Yeung and Zuo 2022). Through regulatory enforcement, authorities such as the IRS have a significant impact on the functioning of the economy. They directly affect the realized effects of corporate law and indirectly impact firms' behavior (e.g., Nessa, Schwab, Stomberg and Towery 2020). As an external monitor to firms, the IRS also contributes both directly and indirectly to corporate governance (Desai, Dyck and Zingales 2007; Guedhami and Pittman 2008; Hanlon and Heitzman 2010). Moreover, tax enforcement

[1] Implicit biases include the unconscious stereotypes and preferences which can cause consciously non-racist or "anti-racist" individuals to unknowingly treat people differently based on their race. Foundational studies on implicit bias include Greenwald and Banaji (1995) and Greenwald, McGhee and Schwartz (1998). Hofmann, Gawronski, Gschwendner, Le and Schmitt (2005) examine the relationship between implicit and explicit biases and discuss reasons that implicit biases might diverge from explicit, conscious, ones.

actions are costly to corporations (Belnap, Hoopes, Maydew and Turk 2022; Gallemore and Jacob 2023). We develop and test predictions for the possible impact of race-related biases on IRS enforcement.

While race-related bias is a polarizing issue, potential inefficiencies and inequities in government enforcement should be of interest to all taxpayers and firms. Congressional leaders have called for a closer examination of IRS enforcement activities as they relate to race (Werfel 2023). Concurrent research provides evidence of race-related disparities in IRS audits of individuals, using inferred taxpayer race (Elzayn et al. 2023). These disparities arise even though IRS agents do not know individual taxpayers' race. In contrast, IRS agents are likely to observe CEO race. We discuss relevant institutional details in Section 2.

It would be reasonable for IRS agents to consider CEO personal characteristics, given that they have been shown to impact firms' tax behavior (e.g., Dyreng, Hanlon and Maydew 2010; Chyz 2013; DeBacker, Heim, and Tran 2015; Law and Mills 2017). Examining relevant personal characteristics, however, can create an opening to consider protected characteristics such as race, even unconsciously. Our aim is not to examine whether IRS agents display racial animus, per se. Internal motivations and thought processes are unobservable. Rather, our aim is to examine whether the IRS's use of CEO data leads to disparate outcomes – differential attention for firms led by Black CEOs – above and beyond differences that are explained by statistical discrimination, such as differences in underlying tax aggressiveness, or in potential tax collections.

We build on existing literature to develop our research design, examining IRS attention, firm tax aggressiveness, IRS monitoring, self-disclosed audits, and tax settlements. We utilize an IRS attention measure developed and validated in Bozanic, Hoopes, Thornock and Williams (2017), and used in Fox and Wilson (2022) and Yost and Shu (2022). We capture IRS attention using the number of times a firm's 10-k is downloaded from IP addresses affiliated with the

IRS. These downloads represent acquisition of public information by the IRS. While the IRS has internal documents, the IRS combines this with information from the public domain to decide whether and to what extent to audit a given firm (Beck, Davis, and Jung 2000; Mills and Sansing 2000; Mills, Robinson and Sansing 2010). An IRS agent may also download SEC filings directly even if they are already stored internally, for ease and convenience.

Seidman, Sinha, and Stomberg (2023) interview tax executives and find that almost all believe the IRS uses information from a large set of company communication, beyond tax returns. We spoke with several tax attorneys and practitioners who have experience working at the IRS. These practitioners characterized Edgar downloads as a common part of the basic research pre-audit process, in which the IRS is in preliminary stages of deciding which firms to audit. While the IRS uses data analytics-based risk assessments as an input in making audit decisions (Kubick, Lockhart, Mills, and Robinson 2017; Nessa, Schwab, Stomberg and Towery 2020), a large human element is still involved. 10-k downloads primarily capture this pre-audit scrutiny by the IRS, with significant human judgement and discretion involved.

We utilize a sample of S&P 1500 CEOs over the years 2008 through 2014. We identify CEO race using CEO photographs, best matching what an IRS agent is likely to observe. This captures whether a CEO appears Black, and is likely to trigger Black-related biases (e.g., Gow, Larcker, and Watts 2022). We then compare Black-CEO-led firms with White-CEO-led firms.

To ensure that we make maximal use of our sample while limiting the extent to which differences between Black- and White-led firms might affect results, we use entropy-balancing for our primary analyses (Hainmueller 2012). However, differences are not driven by this balancing – they occur in univariate statistics, and are robust using propensity score matching.

Results indicate that having a Black CEO is associated with 37 to 40 percent higher IRS attention, even after controlling for a wide set of firm characteristics which might draw IRS attention. This higher attention is not driven by more aggressive tax planning. We control for

tax aggressiveness in our main analyses using the firm's GAAP-based effective tax rate and tax-related contingent liabilities (unrecognized tax benefits). Furthermore, we directly examine multiple measures of tax aggressiveness along a wide spectrum, ranging from book tax differences to tax haven use. We find no significant difference in tax aggressiveness, or find lower tax aggressiveness for Black-CEO led firms compared to White-CEO led firms.

To better understand whether this bias is due to conscious or unconscious/implicit biases, we examine time-series variation with respect to IRS resources. The influence of implicit biases on decisions is expected to be highest when individuals make decisions under time pressure and stress, such as when IRS resources are low (Chugh 2004; and Bertrand, Chugh and Mullainathan 2005). Employing measures of IRS resources for corporate audits from Nessa, Schwab, Stomberg and Towery (2020), we find that there is a significant weakening of the bias towards Black-CEO led firms in higher-resource years. This result suggests that the effect we document is driven largely by implicit biases, rather than conscious, explicit, biases.

To address the endogeneity of CEO choice, we utilize two instruments – the percentage of industry employees who are Black, and racial animus in the company's headquarters state. We find consistent results: IRS attention is significantly higher for Black CEOs.

To examine whether results are driven by our specific IRS Attention measure, we employ an alternate measure for IRS monitoring based upon the expiration of unrecognized tax benefits (UTBs) (Finley and Stekelberg 2022). We find similar results – higher monitoring of Black-CEO led firms.

We further examine consequences of higher IRS attention. In particular, it is possible that the higher attention paid to Black-CEO led firms does not translate into more audits, particularly given similar or lower tax aggressiveness of Black-CEO led firms. We utilize a measure of self-disclosed audits, capturing whether a firm discloses being under audit by the IRS in their 10-k disclosures. Using path analysis, we find that the higher attention to Black-

CEO led firms leads to an increased likelihood of self-disclosed audit.

We conduct two additional tests to address alternate explanations. Using Asian-CEO led firms as a placebo sample, we find that IRS attention to Asian-CEO and White-CEO led firms is indistinguishable. This result is inconsistent with factors related to the hiring of minority CEOs in general driving results, and consistent with the differential race-related biases towards Asian vs. Black Americans, as we discuss in more detail in Section 5.4. We also examine ex-post cash settlements between firms and the IRS (i.e. IRS revenue collections from the given firm), measured using UTB settlements (Fox and Wilson 2022; Robinson, Stomberg, and Towery 2015). We find similar or lower cash settlements for Black-CEO led firms. Thus, higher attention for Black-CEO led firms is unlikely to be motivated by anticipated collections. We further examine whether other CEO characteristics capture IRS attention and drive our results. If so, this would point to disparate impact, in which a prima facie race-neutral practice disproportionately affects individuals from a protected group. We examine CEO age, tenure as CEO with the given firm, overall work experience, overconfidence, and MBA education, as well as measures of CEO compensation: total compensation, delta, and vega. Of these, only three measures are associated with IRS attention, and none explain the differential attention we observe. Tests to evaluate potential omitted variable bias suggest that it is unlikely that other, omitted, CEO or firm characteristics drive the higher attention for Black-CEO led firms.

Our study faces two primary limitations. First, there is a small number of Black CEOs. We utilize all Black CEOs in the S&P 1500 during our sample period. While the number of minority CEOs has slowly increased over the last twenty years (e.g., from 4% of Fortune 500 and S&P 500 firm CEOs in 2008 to 9% in 2019), the number of Black CEOs has remained extremely low (e.g., 1% of Fortune 500 companies in 2020) (Chen 2020; Larcker and Tayan 2020). Our sample includes 25 firms with Black CEOs with 81 Black CEO firm-years. We utilize multiple techniques to verify that our results are not driven by small sample effects or

outliers within this group. Second, we cannot speak to the thinking of IRS agents. We design our tests to address alternative explanations and test specific predictions from implicit bias theory, but cannot definitively say why IRS attention is higher for Black-CEO-led firms. Ultimately, our results show disparate impact, but cannot definitively determine why this disparate impact occurs.

Our paper is of importance despite these limitations. Our results suggest that a closer examination of how and why IRS attention differs for Black-CEO and White-CEO-led firms is warranted. Our results also suggest that consideration of the effects of biases on regulatory bodies more generally is warranted. As the number of minority executives increases, regulatory enforcement biases could impact a growing number of firms.

Our study contributes to a growing literature on the effects of race-related biases in financial economics (e.g., Dougal, Gao, Mayew and Parsons 2019; Bhutta and Hizmo 2020; Ambros, Cocklin and Lopez 2021; Fairlie, Robb, and Robinson 2020; Begley and Purnanandam 2021; Bartlett, Morse, Stanton, and Wallace 2022; Gerardi, Willen, Zhang 2023). We provide the first evidence that CEO race affects regulatory oversight and enforcement. This research is not only of interest to academics, but to the public (e.g., O'Neal and Versprille 2020) and regulators (e.g., Garcia, Draeger, and Greff 2021) as well.

Further, we contribute to the nascent literature on behavioral biases in regulatory enforcement. There is little research examining the effects of behavioral biases on regulators and enforcement agencies (Malmendier 2018; Hanlon, Yeung, and Zuo, 2022). Stice-Lawrence (2021) finds evidence that simple heuristics affect the allocation of SEC employees' attention. Our study contributes to this literature by documenting the impact of a specific bias, race-related implicit bias, on the allocation of IRS attention. Several studies examine quantitative determinants of corporate tax enforcement (e.g., Kubick, Lockhart, Mills, and Robinson 2017; Lin, Mills, Zhang, and Li 2018; Nessa, Schwab, Stomberg and Towery 2020). Ours is the first,

to our knowledge, to examine a behavioral bias in tax enforcement.

Finally, more broadly, we contribute to the literature examining race-related biases in legal enforcement. Research has examined such biases in the context of the criminal justice system, for example examining stop and search and violent crime (e.g., Eberhardt, Davies, Purdie-Vaughns and Johnson 2006; Eberhardt 2019; and Pierson et al. 2020). We expand this to consider financial enforcement.

2. IRS Enforcement and CEO Race

The primary hypothesis of our paper is that race-related biases might affect IRS agents when they allocate their enforcement attention. In this section, we provide relevant background on the IRS process and research on race-related biases, upon which we base this hypothesis. Biases can potentially relate to a wide variety of characteristics, including gender, age, weight, race, disability, and more. While tax filings do not include direct information about CEO race, IRS agents are likely to learn a CEO's race in the normal pre-audit process. Once an IRS agent is aware of a CEO's race, the agent's biases can affect how much additional attention they pay to the given firm, even if this effect is unconscious. Additional details about both aspects – IRS process and related research – are available upon request.

2.1 The IRS Internal Process

The Large Business and International (LB&I) division of the IRS oversees corporations with assets greater than $10 million, including most of the firms in our sample. Thus, we focus on LB&I processes in this section. The information we describe in this section is based upon official IRS documentation, existing academic research, and conversations with several individuals with experience with the IRS. The IRS pre-audit and audit process has changed over time, particularly as it applies to large publicly traded companies. In the early 2000's, the IRS subjected almost all large firms to continuous audit. This was no longer the case for the

majority of firms during our sample period, resulting in significant variation in IRS attention.[2]

The IRS utilizes quantitative risk analysis as an important factor in deciding how to target monitoring and enforcement efforts. These quantitative metrics might mitigate the potential effects of any biases, but do not fully explain IRS behavior. Firm-level quantitative factors explain 45.7% of the variation in IRS attention in Bozanic, Hoopes, Thornock and Williams (2017).[3] Thus, quantitative metrics explain a large portion, but not all, of the variation in IRS attention and enforcement observed in prior research.

Despite the use of quantitative risk analysis, significant IRS agent judgement remains. One person we spoke to, with detailed knowledge of the IRS process, described the process as *"Totally judgement. Of course you start off with your risk assessment, but then… totally judgement."* They compared the IRS process to other audit settings, in which quantitative factors and risk analyses are used as inputs, but professional judgement plays an important role.

While IRS agents are unlikely to actively seek information on CEO race, they are likely to incidentally observe it, if they follow standard procedures. We discussed the question of IRS knowledge of CEO race with several practitioners with experience either in, or working closely with, the IRS, including current and former IRS agents, tax attorneys, and a CFO whose firm had been audited.[4] The individuals we spoke with confirmed that the IRS agents overseeing large corporations are typically aware of the identity of the CEO and basic information about that CEO, including race when clear (e.g., when identifiable from a CEO's appearance or when a topic of media coverage). Below, we provide three examples of how this occurs in the current

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[2] Bozanic, Hoopes, Thornock and Williams (2017) focus on a similar sample period, 2007 through 2014, and find significant cross-sectional and within-firm variation in IRS Attention. Similarly, Fox and Wilson (2022) examine 2007 through 2015, and find predicted variation in IRS Attention. However, there were some firms which were still subject to continuous audit during this sample period. We conduct additional analysis to ensure that continuous-audit cases do not affect inferences. We estimate the probability that a firm is in the continuous audit program in a given year, using the model in Ayers, Seidman and Towery (2019), and include this probability as an additional control variable. Results are similar.

[3] Such factors explain 12.6% of the variation in the probability of receiving a proposed deficiency from the IRS (Nessa, Schwab, Stomberg and Towery 2020).

[4] All spoke on the condition of anonymity, and asked not to be directly quoted.

IRS process. Our goal is not to provide an exhaustive list, but rather illustrative examples.

First, one of the ways in which IRS agents often learn information about a CEO, including CEO race, is through verification of executive compensation. In order to verify that the corporate accounting for executive pay is correct, LB&I agents are responsible for checking other documents for consistency (IRM 1.1.24). IRS audit guides recommend that agents use form Def 14A, a proxy statement filed with the SEC. Def 14A provides executives' identities and compensation, often including pictures of all members of the board of directors, including the CEO, and sometimes including additional pictures of executives, thus revealing the race of the CEO.[5] Figure 1 provides examples. Gow, Larcker, and Watts (2022) use the pictures in Def 14A filings to identify board members' race, demonstrating how these form can lead to identification of CEO race.

Second, IRS audit guides for large corporations encourage using Internet searches to gather information (IRS 2017). One IRS agent we spoke to stated that LinkedIn searches for the CEO and other corporate officers are common, and that agents sometimes conduct Google searches as well. Sources such as LinkedIn and Google are likely to include CEO photographs, revealing CEO race.

Third, IRS agents will often use media coverage when examining a firm. It is important for IRS agents to understand firm-related events which occurred during the tax year. Media coverage will often include CEO photographs. Further, while we are unaware of a systematic analysis of the impact of CEO race on press coverage, anecdotes suggest that the media often covers Black CEOs, and mentions their race when doing so, particularly upon appointment or departure. The practitioners we spoke with stated that media coverage would sometimes prompt IRS agents to examine a firm more closely, particularly if it was not yet being audited.

[5] The CEO is an executive director in 94% of our main sample, thus ensuring the inclusion of the CEO in the list of board members and pictures/bios in form Def 14A in most cases.

Finally, it is possible that outside biases can spill over to affect IRS agents, if they do not correct for those biases. In particular, The Tax Relief and Health Care Act of 2006 enhanced the IRS whistleblower program, successfully encouraging individuals to provide tips on possible tax non-compliance. For example, the LB&I division received 1,987 tips in the year 2014 (Internal Revenue Service 2015a). Bergemann and Wright (2023) theorize that whistleblowers are more likely to report behavior to an outside authority such as the IRS if the alleged perpetrator is perceived as out-group, and find evidence consistent with this for reporting of the Taliban in Afghanistan. In our setting, a Black CEO is more likely to be perceived as out-group by many employees, given that the majority of employees will be non-Black. As of 2018, Blacks made up only 13% of the American labor force (Bureau of Labor Statistics 2019). Thus, if whistleblowers disproportionately provide tips on Black CEOs due to their own biases, this would spill over into IRS attention, as the IRS follows up on these tips.

2.2 Broader Research on Race-Related Biases

As discussed in the introduction, a growing body of research documents race-related biases in financial market settings. In this section, we summarize the underlying research on race-related bias, and how it is likely to apply in the IRS setting.[7]

A long history of research has examined and documented explicit, taste-based, discrimination. Such conscious taste-based discrimination has been on the decline in the United States, over a period of several decades (Pager and Shepherd 2008). However, even those who do not hold conscious biases can exhibit unconscious, implicit biases. Greenwald and Krieger (2006) discuss the theory and science behind implicit bias. Implicit bias falls within the broader category of unconscious mental processes which affect decisions and behavior. Importantly, even if a specific implicit bias is small, the cumulative impact of implicit bias on decisions and

[7] Race-related, color-based, religious, and other biases are not limited to the United States (e.g., Vomfell and Stewart 2021). However, biases are likely to be culture-specific. We focus on US-related research, given our US setting.

actions can still be significant (Greenwald, Banaji, and Nosek 2015). Thus, even if IRS agents are not consciously biased, implicit biases can affect their behavior.

Eberhardt (2019) synthesizes a large body of research on race-related attentional bias, which can be driven by both explicit and implicit biases. Individuals pay more attention to Black individuals when they are thinking about, or have recently thought about, crime. A vast body of work shows race-related attentional bias in the criminal justice system, affecting everyone from police, to witnesses, to juries, and judges. The reverse is also true – individuals are more likely to believe they have seen objects related to crime when they have been primed with Black faces (Eberhardt, Goff, Purdie, and Davies 2004). Tax aggressiveness covers a spectrum, at the extreme end of which is criminal tax evasion, and IRS agents are tasked with enforcing tax law. Thus, IRS agents may be prone to a similar attentional bias.

Research has shown that individuals in a wide range of other professional settings are subject to race-related biases, with biases affecting their work. For example, race- and gender-related biases affect the professional judgements of teachers, doctors, and musical directors (see, e.g., Goldin and Rouse 2000; Hoffman, Trawalter, Axt, and Oliver 2016; Riddle and Sinclair 2019; Chin, Quinn, Dhaliwal, and Lovison 2020). A growing body of research finds evidence of race and gender biases impacting investor choices, including those of professional investors (see, e.g., Dougal, Gao, Mayew, and Parsons 2019; Fairlie, Robb, and Robinson 2020; Friedman 2020; Bloomfield, Rennekamp, Steenhoven and Stewart 2021).

Additionally, it is important to note that biases can affect in-group as well as out-group members. Thus, even Black IRS agents may be subject to biases towards Black-CEO led firms. For example, Voigt et al. (2017) finds that Black and White police officers both show less respect to Black individuals than White individuals in the communities they are policing, with similar biases regardless of police officer race. Because of this potential for within-group bias, racial diversity of the group in question, i.e., the IRS, does not preclude influence of race-

related biases.[8]

While the majority of the literature on race-related biases, discussed above, suggests that stereotypes will draw enforcement attention to Black CEOs, the opposite could be true. One challenge to developing directional predictions is that it can be difficult to predict precisely what form biases will take, and how they will impact behavior (Greenwald and Krieger, 2006). Stereotypes of tax avoiders may be tilted more towards White males given that historically the majority of the individuals in charge of corporate financial decisions had these characteristics. For example, Sohoni and Rorie (2021) write about "the whiteness of white-collar crime." Such stereotypes of white-collar criminals as White males might extend to tax aggressiveness. Thus, we may observe a type of "reverse discrimination" in which the IRS pays disproportionate attention to firms led by members of the majority group. Thus, we view it as an empirical question whether, and in what direction, race-related biases will impact IRS Attention.

2.3 Existing Evidence of Disparate Impacts

There is some existing evidence of biases in IRS enforcement. In the early 2010's, media reported on several political organizations struggling to have their tax-exempt status approved by the IRS. Congress conducted a years-long investigation, which found that both right- and left-wing organizations had been subjected to additional scrutiny and processing delays, due to the applicant organizations' political views being considered (Committee on Finance, 2015). But due to the timing and quantity of tax-exempt status requests, this IRS behavior largely affected Tea Party applicants (Goldfarb and Tumulty 2013).

More recently, evidence using inferred audits has indicated that there are more IRS audits for tax filers in the Southern Black Belt, possibly related to earned income tax credit claims

[8] It is unclear what the demographic breakdown of the Large Business and International (LB&I) division of the IRS, which oversees corporations with assets greater than $10 million, is. The IRS reports that 25.9% of employees are Black overall, as of 2014. However, only a small portion of overall employee count is focused on tax enforcement for large businesses. The IRS does not report demographic statistics for individual divisions (Koskinen, Marcuss, Johnson, and Kei 2014).

(Bloomquist 2019, Mock 2019). In a recent working paper, Elzayn et al. (2023) utilize a large sample of tax data from the Treasury department and infer race using statistical methods. They find significantly higher audit rates for Black individual taxpayers than non-Black individuals, largely driven by audit policies related to the earned income tax credit.

In both of these cases, stated IRS policy would prohibit targeting of particular political or racial groups. Yet disparate impacts appear to have occurred. These examples indicate the plausibility of CEO race effects.

The remainder of the paper examines whether IRS Attention differs for Black-CEO firms compared to White-CEO firms, and examines potential explanations for the difference. We discuss each of these tests, expectations, and interpretations, in the respective sections.

3. Data, Measures, and Univariate Evidence

Our sample consists of S&P 1500 firms with sufficient data over the period 2008 through 2014. We hand-collect CEO race for all CEOs listed in the Execucomp database over the years 2008 through 2014, as described below. Table 1 summarizes sample selection. Our primary sample is the subset of S&P 1500 firm-years with either a Black or White CEO, IRS attention data, and necessary data for the calculation of control variables. Our sample consists of 12,058 firm-year observations, of which 81 have a Black CEO, mapping to 25 Black CEOs. Black CEOs have a tenure ranging from 1 to 7 years within our 7-year sample period, with an average (median) of 3.24 (3) years. We refer to this sample as the "full sample" in the rest of the paper.

For the majority of our analyses, we additionally include two controls for firms' tax aggressiveness, given that IRS Attention is logically related to tax aggressiveness. Unfortunately, one of the primary measures for tax aggressiveness, effective tax rate based upon financial reporting (*GAAPETR*), is undefined for negative income. Thus, requiring *GAAPETR* results in dropping all firm-years in which a firm has a loss, resulting in a sample

of 9,831 firm-years, of which there are 56 Black-CEO led firm-year observations, mapping to 20 Black CEOs. We refer to this sample as the "main sample."[9]

The two primary variables for our study are CEO race and IRS attention. We define each in more detail below. All other variables are defined in standard ways, with variable definitions provided in Appendix A.

3.1 CEO Race

We code CEO race based upon photographs, focusing our race classification on how the CEO is perceived by external observers, rather than their self-identified race. This follows prior research (Cook and Glass 2014; Gow, Larcker, and Watts 2022). This distinction is particularly important for our purposes: IRS agents are unlikely to know a CEO's internal racial identity. Instead, it is likely to be a CEO's appearance that triggers any race-related biases.

In order to determine CEO race, we first obtain CEO photographs online.[10] We begin with a simple Google search for the CEO name. For common names, the CEO name and company name are both used. Photographs are typically obtained from the CEO profile created by Google, the company's website, or further search. We then have two research assistants independently code their perception of the CEO's race based on these photographs, as one of the following categories: White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, Hispanic, Other, and Unsure.

When the two research assistants disagree on a CEOs race, a third research assistant or one of the co-authors examines the given CEO and classifies them based upon publicly available information. In the handful of cases for which the CEO's race is still unclear, the race

[9] While our sample is sufficiently large for statistical inferences, given the small number of Black-CEO firms, we conduct additional analyses to ensure that outlier Black CEO firm-years do not drive our results. See Section 5.7 for details.

[10] We choose to engage in primary data collection as there are issues with existing datasets which would adversely affect our study (see Gow, Larcker, and Watts 2022 for a detailed discussion on problems with existing datasets). Given the low number of Black CEOs in the S&P 1500 sample, it is important to have correct classification for our study.

is coded as "Unsure," and the CEO is not included in either the White or Black CEO samples.

We randomly audited a sample of CEOs coded in each race category at various stages in the data coding process, to ensure accuracy and consistency. Additionally, we verified all CEOs identified as Black.

3.2 IRS Attention

We define *IRS Attention* following Bozanic, Hoopes, Thornock and Williams (2017), as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses.[11] As discussed in Section 2, the IRS guides its agents to utilize SEC filings obtained from Edgar when examining firms, even including links to the SEC Edgar page in some of its audit guideline documents. This measure has been validated and used in other research papers examining the determinants of IRS attention (e.g. Fox and Wilson 2022; Yost and Shu 2022; Finley and Stekelberg 2022).

As an additional analysis, we utilize an alternate measure of IRS enforcement activity, *Tax Monitor*, based on UTB expirations (Finley and Stekelberg 2022). We define this variable in more detail in Section 5.2.

3.3 Summary Statistics and Univariate Evidence

Table 2, panel A presents summary statistics for the main sample, for which tax aggressiveness control variables are defined. All continuous variables are winsorized at the first and 99th percentiles. The average number of 10-k downloads per firm-year is 11.7 (*IRS_Attention (Raw)*). On average, the total tax expense is 29.3% of the pre-tax income (*GAAP ETR raw*), while the unrecognized tax benefits are 0.7% of the total assets (*UTB raw*).

Table 2, Panel B presents the summary statistics for the main sample, separated by the race of the CEO. The sample mean seen in Panel A for all the variables are closer to the values

[11] We thank the authors for making the IRS downloads data available.

noted for the White-CEO observations due to underrepresentation of Black CEOs in the S&P 1,500 sample.

Focusing first on firm- and tax-related characteristics, the two sets of firms are largely comparable, but differ along a few dimensions. Black-CEO led firms in our sample are larger in size, but do not differ in profitability measured using *ROA.* This finding suggests that the "glass cliff" phenomenon of appointing minority leaders to precarious positions may not hold in our sample (Cook and Glass 2014; Ryan and Haslam 2005). Other aspects such as market to book ratio (*MB*), presence in multinational companies (*MNE*), amount of cash holdings (*cash*), leverage, and R&D expenditure are similar. The two samples differ in inventory holdings, with Black-CEO led firms having lower inventory. Finally, Black-CEO led firms have slightly higher unrecognized tax benefits scaled by total assets (*UTBs*), but similar GAAP Effective Tax Rates (*GAAPETR*).

Both *IRS_Attention (Raw)* and *IRS_Attention* are significantly higher for Black-CEO led firms than for White-CEO led firms. In particular, IRS-associated IP addresses download over twice the number of 10-K filings per Black-CEO led firm-year (26.6) as per White-CEO led firm-year (11.6). Figure 2 summarizes this information graphically, including a test for the significance of the difference between *IRS_Attention (Raw).* Similarly, the logged measure, *IRS Attention,* is 38% higher for Black-CEO led firms than White-CEO led firms, with the difference significant at the 1% level. These univariate statistics indicate that the IRS pays more attention to Black-CEO led firms on average, however this could be due to other factors. We explore this further in Section 4.

Tax Monitor, an alternate measure of IRS enforcement activity, is significantly higher (p-value <1%) for Black-CEO led firms (0.841) than that of White-CEO led firms (0.659). This finding shows that the differential IRS behavior is not restricted to just attention, but also extends to monitoring. The settlement revenue with IRS (*Tax Settle)* is no different between

Black- and White-CEO led firms suggesting that the increased attention and monitoring of Black-CEO led firms does not generate excess revenue. *Audit Ref,* a binary measure of self-disclosed IRS audits is also significantly higher for Black-CEO led firms (64.2% versus 42.7%). We explore these ideas further in sections 5.2 – 5.5.

4. IRS Attention, Firm Tax Aggressiveness, and IRS Resources

4.1 IRS Attention for Black-CEO Led Firms: Research Design and Results

Our primary research question is whether the IRS pays higher attention to Black-CEO led firms. Based on existing research, we model IRS Attention as a function of firm characteristics and tax aggressiveness. We estimate the following entropy-balanced regression model:

$$IRS\_Attention_{i,t} = \alpha + \beta_1 * BlackCEO_{i,t} + \beta_2 * Size_{i,t} + \beta_3 * MB_{i,t} + \beta_4 * MNE_{i,t} + \beta_5 * Cash_{i,t} + \beta_6 * Inventory_{i,t} + \beta_7 * Leverage_{i,t} + \beta_8 * R\&D_{i,t} + \beta_9 * ROA_{i,t} + \beta_{10} * GAAPETR_{i,t} + \beta_{11} * UTB_{i,t} + Industry\ FE + Year\ FE + \epsilon_{i,t}\ . \quad (1)$$

The dependent variable is *IRS Attention*, as defined in Section 3. *BlackCEO* is an indicator variable equal to one if the firm was led by a Black CEO in that year, and zero otherwise.

We use entropy balancing to achieve covariate balance between the treatment and control samples (Hainmueller 2012). For the full sample (main sample) of 81 (56) Black-CEO observations, we use entropy balancing to reweight the 11,977 (9,775) White-CEO led control observations to obtain comparable distributions of the moments of matching variables. Entropy balancing has also been shown to be suitable when the treatment sample is smaller relative to the control sample (e.g. Shroff, Verdi, and Yost, 2017), such as in this case, where there are fewer Black-CEO led firms than White-CEO led firms.[12] We balance on a yearly basis, and

[12] The number of treated observations used in entropy-balanced tests in Shroff, Verdi, and Yost (2017) is 70 relative to 5,120 control observations, In comparison, the number of treated observations in our full sample is 81, and 56 with the additional inclusion of certain tax control variables, relative to 9,775 control observations. McMullin and Schonberger (2022) provides support for having a smaller treatment than control sample, recommending flipping the two if the reverse is true, in order to avoid the assignment of extreme weights.

use all the firm-related variables (*Size, MB, MNE, Cash, Inventory, Leverage, R&D,* and *ROA*) as matching variables for the full sample. We further include tax aggressiveness control variables (*GAAPETR* and *UTB*) for the main sample. Summary statistics indicate a good match, with no significant differences in means between the Black- and White-CEO samples for any variables used in balancing.[13,14]

We include a wide set of firm- and tax-related variables that may drive *IRS Attention*. In particular, based upon prior research, we control for firm size (*Size),* measured as the natural log of total assets, *leverage*, return on assets (*ROA),* and R&D expense scaled by total sales (*R&D*) – known determinants of IRS audit probability (Gallemore and Jacob 2020; Hoopes, Mescall, and Pittman 2012; Nessa, Schwab, Stomberg and Towery 2020). We control for growth prospects using market to book ratio (*MB*) as growing firms might be more tax-aggressive (Chen, Chen, Cheng, and Shevlin 2010). Multinational firms (*MNE*), firms with higher levels of inventory (*Inventory*), proxying for business complexity, and firms with higher R&D activities which can income shift between higher- to lower-tax regimes, are known engage more in tax-planning (De Simone, Mills, and Stomberg 2019; Hanlon, Mills, and Slemrod 2007; Lisowsky 2010). Firms with cash constraints (*Cash*) are more likely to engage in tax avoidance to increase internal funds (Edwards, Schwab, and Shevlin 2015), while more profitable firms (higher *ROA*) may engage in tax sheltering due to higher resource availability (Wilson 2009). We also control for two measure of tax avoidance – *GAAPETR* and Unrecognized tax benefits (*UTB*) – which could increase IRS interest in the firm (Bozanic,

[13] Post-balancing summary statistics are available upon request. We also graph the Q-Q plot of each of the balancing variables. The distributions of all balancing variables fall more along a superimposed 45-degree line, which indicates identical distributions, after balancing. However, as is to be expected, some differences remain.

[14] We choose entropy balancing rather than propensity score matching (PSM) as entropy balancing achieves better matching due to assignment of continuous weights rather than binary weights (of 0 or 1) assigned to the control sample in PSM, and is less affected by researcher design decisions (DeFond, Erkens, and Zhang 2017; McMullin and Schonberger 2020). The use of continuous rather than binary weights is particularly relevant for our sample, as it allows for retention of the full sample instead of dropping control-sample observations.

Hoopes, Thornock and Williams 2017). We include year fixed effects to control for time trends, such as changes over time in the overall level of IRS downloads from Edgar (Bozanic, Hoopes, Thornock and Williams 2017; Fox and Wilson 2022). We also include industry fixed effects to account for industry-level variation in IRS attention.[15] All standard errors are clustered at the firm level. Appendix A presents detailed variable definitions.

Results are presented in Table 3. Column (1) shows the results for the full sample, without requiring tax control variables. Column (2) shows the results for the main sample for which these variables are defined, but without the inclusion of controls for *GAAPETR* and *UTB.* Column (3) introduces the controls for tax behavior and Column (4) adds industry fixed effects. The coefficient on *Black-CEO* is positive and statistically significant in all four models. It is significant at <0.01 level for the larger sample in Column (1). It remains almost the same in columns (2) through (4), for the more restricted main sample, and is significant at <0.05 level. The coefficient of 0.340 in columns (2) and (3) and 0.329 in column (4) shows that Black-CEO led firms face roughly 40% higher attention from IRS officials as compared to White-CEO led firms (40.4% in columns 2 and 3, 38.9% in column 4). This increased attention translates to almost 2.2 times the standard deviation of *IRS Attention*. Supporting the findings in prior literature, we find that IRS attention increases with firm size, presence of foreign subsidiaries (*MNE*), and profitability (*ROA*).

Results are similar with an expanded set of control variables including sales growth, return on equity, property plant and equipment, change in tax loss carryforward, book tax differences, cash effective tax rate, net deferred tax assets, and net deferred tax liabilities (Cook and Glass 2014; Bozanic, Hoopes, Thornock and Williams 2017). While this reduces the sample, results remain robust. The coefficients on *Black* remain positive and statistically significant at the 5%

[15] Due to underrepresentation of Black CEOs in the S&P 1500 sample, we do not have sufficient number of CEO changes from White CEO to Black CEO or vice-versa to be able to estimate the model meaningfully using firm fixed effects.

level or better, with coefficient magnitudes ranging from 93% to 97% of the magnitude reported in Table 3. As many of these additional controls are highly correlated with variables already included in Equation (1), we do not include the extra controls in our main tests.

As an additional robustness test, we estimate Equation 1 using propensity score matching rather than entropy balancing. We match each Black-CEO led firm-year with the three nearest neighbors from the sample of White-CEO firms. We utilize a one-to-many match to better utilize the relative Black-CEO and White-CEO samples. We match on the two most important determinants of tax avoidance and IRS attention: firm size and leverage. Results are similar. Coefficient estimates for *Black* are slightly higher, ranging from 123% to 167% of the coefficient estimates reported in Table 3, and are statistically significant at the 5% level or better.

4.2 Tax Aggressiveness

The results presented in Section 4.1 show that the IRS pays significantly higher attention to Black-CEO led firms than a balanced set of White-CEO led control firms. To understand whether there are any systematic differences in tax-aggressiveness of Black and White CEOs, we estimate the following model using entropy balancing, balancing on all included control variables:

$$Tax\ Avoidance_{i,t} = \alpha + \beta_1 * BlackCEO_{i,t} + \beta_2 * Size_{i,t} + \beta_3 * MB_{i,t} + \beta_4 * MNE_{i,t} + \beta_5 * Cash_{i,t} + \beta_6 * Inventory_{i,t} + \beta_7 * Leverage_{i,t} + \beta_8 * R\&D_{i,t} + \beta_9 * ROA_{i,t} + Industry\ FE + Year\ FE + \epsilon_{it}. \quad (2)$$

Consistent with Hanlon and Heizman (2010), we recognize that tax avoidance spans a spectrum from more conventional and accepted behavior to more extreme and risky behavior. We utilize several measures along the tax avoidance spectrum.

First, we use total book tax difference (*BTD*), and permanent book tax difference (*PBTD*) to capture all forms of tax avoidance, ranging from legal actions which reduce taxes, such as

taking advantage of tax credits, to more controversial tax positions such as tax shelters. These two measures provide an overall measure of tax avoidance. Similarly, book tax differences, effective tax rates (ETRs) capture overall tax avoidance. Balakrishnan, Blouin, and Guay (2018) argue that industry- and size-adjusted ETRs, a measure of how aggressively a company is avoiding taxes relative to its peers, are more likely to capture aggressive tax planning that might draw the attention of the IRS. Following this approach, we use GAAP ETR (*GETR_adj*) and Cash ETR (*CETR_adj*), both with industry and size adjustment.

Next, we use unrecognized tax benefit (*UTB*). *UTB* has theoretical and practical advantages for measuring tax aggressiveness as a higher value of *UTB* means that the firm recognizes a larger tax position which could be challenged by the IRS (De Waegenaere, Sansing, and Wielhouwer 2015; Goh, Lee, Lim and Shevlin 2016; Lisowsky, Robinson, and Schmidt 2013). The primary disadvantage is that *UTB* involves management discretion regarding the amount to accrue (Hanlon and Heitzman 2010).

Further along the tax aggressiveness spectrum, we utilize the estimated probability that a firm has entered into tax shelters (*SHELTER*) to capture a particularly extreme form of tax avoidance behavior (Wilson 2009). While this measure also has its limitations, as the predictive model is based on a small sample of identified tax shelter firms, it captures a particularly strong form of tax aggressiveness and has been widely used (e.g., Rego and Wilson 2012; Olsen and Stekelberg 2016; Francis, Hasan, Sun, and Wu 2016). Finally, we use a measure of firms' operations in tax haven countries (*HAVEN*) developed by Dyreng and Lindsey (2009), and used in other recent research (e.g., Lampenius, Shevlin and Stenzel 2021).[16]

We include the same set of firm characteristics included in Equation (1) as these variables are known determinants of tax avoidance behavior. Naturally, we do not include either of the

[16] We thank Scott Dyreng and Bradley Lindsey for sharing tax haven data.

tax aggressiveness variables used in Equation (1) as controls. We are interested in the coefficient estimate for β_1, whether Black-CEO led firms engage in differential tax aggressiveness than White-CEO led firms, after controlling for relevant firm characteristics.

The results of estimating Equation (2) are presented in Table 4. The columns are arranged roughly in increasing order of egregiousness in the tax avoidance spectrum, with book tax differences in column (1) to tax sheltering in column (6) and tax haven use in column (7). The coefficient estimates for Black-CEO in columns (1) – (2) and columns (4) – (7) are insignificant, implying that there is no significant difference in tax aggressiveness between Black-CEO and White-CEO led firms. The coefficient is negative and significant at $p< 0.10$ in column (3), suggesting that Black-CEO led firms may be *less* tax-aggressive than White-CEO led firms. Overall, these results, using a large and varied set of tax aggressiveness measures, fail to find any evidence of higher tax aggressiveness by Black-CEO led firms to justify the higher IRS attention on Black-CEO led firms.

4.3 IRS Resources

Theory and evidence suggests that implicit biases should have the strongest impacts when decision makers are time-constrained and under greater stress (Chugh 2004; Bertrand, Chugh, and Mullainathan 2005). It is at these times that individuals are more likely to unconsciously rely on their implicit biases. Thus, when the IRS has more resources to allocate towards examining corporate tax filings, the effect of implicit biases should be attenuated.

We measure IRS resources (*IRSRES*) using two measures based on confidential IRS audit data, as provided by Nessa, Schwab, Stomberg and Towery (2020). Both measures are based on IRS resources per audit, such that they capture the amount of time or money that the IRS has available to them, scaled by the number of firms the IRS is auditing in the given year. In years when resources are low relative to the number of audits being completed, it is likely that IRS agents will be under greater stress and have more demands on their time. This is the type

of situation described in Chugh (2004), when implicit biases are likely to have the largest effects. We define an indicator variable, *I(IRSRES)*, which takes the value of 1 for years in which *IRSRES* is above the median, and 0 for years in which it is below. We then supplement Equation 1 with *Black*I(IRSRES)*. The indicator *I(IRSRES)* is subsumed by year fixed effects.

Table 5 reports results for variation of racial bias with respect to the availability of IRS resources (*IRSRES)*. Column (1) presents the results when *IRSRES* is measured by the total hours spent by the IRS per returns audited, while in column (2), *IRSRES* is measured as the inflation adjusted enforcement budget per returns audited. We find significantly negative coefficients on *Black*I(IRSRES)* using both IRS resources measures. The Black-CEO-related attentional bias is significantly attenuated when the IRS has more resources.

These results provide further evidence of implicit biases affecting IRS attention – the variation in the race-related effect is consistent with predictions. They also suggest one method for mitigating race-related attentional biases in enforcement activity – giving decision makers the time and resources to make more considered decisions.

5. Identification and Alternate Explanations

5.1 Two-Stage Least Squares Analysis

CEO choice is inherently endogenous. There may be firm characteristics associated with the appointment of Black CEOs which draw IRS attention for other reasons. Although we control for, and conduct entropy balancing for, several firm-level characteristics, there could still be some uncontrolled firm characteristic driving the results. To address this issue, we estimate equation (1) using a two-stage-least-squares (2SLS) specification. We use two instruments for the endogenous variable, *BlackCEO*. Ideally, we would like to identify variables which are predictive of the appointment of a Black CEO, but are unrelated to firm characteristics which should attract IRS attention, absent race-related biases.

Our first instrument is the percentage of employees in the industry who are Black (*%BlackInd*), as reported by the Bureau of Labor Statistics. Industry demographics serve as a noisy proxy for the current diversity of the industry-specific job market, and the openness of industry firms to hiring Black employees. A firm in an industry with a higher percentage of black employees is likely to more naturally consider Black CEO candidates as part of their CEO candidate pool.

Our second instrument is a location-based instrument for the likelihood of selecting a Black candidate from the pool. We use a composite measure for racial animus by state developed and used in Dougal et al. (2019). As in Dougal et al. (2019), we classify the top ten states ranked on a composite measure of racial animus as high racial animus (*RacialAnimus = 1*). We expect firms headquartered in high racial animus states to be less likely to appoint Black CEOs, to the extent that management or board members of the firm share, or are influenced by, local norms. Dougal et al. (2019) find significantly higher loan spreads for historically black colleges and universities (HBCUs) in high animus states than low animus states, consistent with state-level racial animus affecting financial decision-making. Thus, we expect both *%BlackInd* and *RacialAnimus* to be related to the appointment of Black CEOs. But there is no clear reason that IRS attention should be related to either of these variables, absent race-related biases.

Table 6, column (1), presents results for the first stage. *BlackCEO* is positively related to *%BlackInd* and negatively related to *RacialAnimus*, as expected. First stage results presented in column (1) show that our instruments satisfy the relevance assumption. The Kleibergen-Paap LM statistic is significant at the 1% level, thus rejecting the null hypothesis of under-identification, while the Cragg-Donald Wald F-statistic is greater than the Stock-Yogo critical values at 10% bias showing that these are not weak instruments (Stock and Yogo 2005). Table 6, column (2) presents results for the second stage. We find a positive and statistically

significant coefficient on *Pred(BlackCEO)*, which is the predicted value of *BlackCEO* obtained from the first stage. These results suggest that endogenous CEO choice is not driving the relation between IRS attention and CEO race.

5.2 IRS Monitoring

Another alternate interpretation of our primary results is that IRS Attention is an unusual or unique IRS behavioral measure, and is not relevant to other IRS activity. In this section, we employ an alternate measure for IRS activity, IRS monitoring, based upon the expiration of unrecognized tax benefits (UTBs), developed and validated by Finley and Stekelberg (2022). The measure is based on the expiration of firms' tax-related contingent liabilities - UTBs.

Firms provide detailed data on changes in UTBs, explaining whether changes are due to settlements with the IRS, determinations that the tax position is no longer uncertain, or a lapsing of the UTB due to the statute of limitations. This last category implies that the IRS did not examine the questionable tax position before the statute of limitations (typically three years) expires, and implies a lower level of IRS monitoring of the given firm's uncertain tax positions. *Tax Monitor* captures this concept; it is measured as one minus the lapses in UTB due to expiry of stature of limitations in the period t to t+3, divided by the UTB in the year t. Higher values of this measure imply higher monitoring by tax authorities – fewer uncertain tax benefits go unexamined by the IRS long enough to expire due to statute of limitations expiration.

While this measure can be used as a proxy for IRS monitoring of firms' more controversial tax positions, one significant drawback for our purposes is that firms choose the amount of UTBs they report. Because of this, a high level of UTB expiration may be due to conservative reporting, rather than low IRS monitoring. Hanlon and Heitzman (2010) discuss management judgement involved in the recording of UTBs. However, this measure provides an alternate measure of IRS resource allocation.

To examine whether the IRS performs differential tax monitoring for Black-CEO led

firms, we estimate a model similar to Equation 1, replacing the dependent variable, *IRS Attention*, with *Tax Monitor*. We obtain data for 2008 through 2017, beyond which we cannot expand due to requiring three year-ahead data. Results are presented in Table 7. We find significantly higher IRS monitoring for Black-CEO led firms relative to White-CEO led firms in all models. In terms of economic magnitudes, coefficient on *BlackCEO* of 0.089 in column (4) translates to an additional $12.4 million of uncertain tax benefits being examined for Black-CEO firms. Thus, the IRS is not only searching more heavily for outside information, in particular SEC filings, for Black-CEO led firms. In addition, they are more actively interacting with Black-CEO led firms when these firms report uncertain tax positions, rather than letting these uncertain positions go unquestioned until expiry.

5.3 Subsequent Audits

The evidence presented above is consistent with higher IRS attention to firms led by Black CEOs, which is not driven by higher tax aggressiveness, and which is related to CEO race. However, it is possible that such attention does not lead to more audits. It may be that IRS agents are especially cautious in the pre-audit phase for Black-CEO led firms, but that such care results in similar, or fewer, audits. Belnap, Hoopes, Maydew and Turk (2022) provide evidence that tax audits have an economically and statistically significant real cost to audited businesses, due both to the direct administrative costs of the audit, and multiple indirect effects on audited firms. Thus, it is important to better understand the implications of IRS attention for audits of Black-CEO led firms. The Tax Monitor evidence, presented in Section 5.2, is suggestive of the IRS going further than simply pre-audit research, given that tax monitoring of UTBs involves IRS-firm interaction. In addition, the summary statistics reported in Table 2 indicate a higher rate of self-disclosed IRS audits for Black-CEO led firms than White-CEO led firms (64.2% versus 42.7%). In this section, we conduct an additional analysis to more directly address whether higher IRS attention leads to more audits.

While IRS audit data is confidential, many firms voluntarily disclose if they are under audit in their detailed 10-k footnotes. We use a measure used by Bozanic, Hoopes, Thornock and Williams (2017) which captures firm mentions of IRS audits in the 10-k. The authors start with a list of all footnotes which include certain keywords related to IRS audits, such as "audit" "exam" or "investig" within 20 characters of "IRS" "I.R.S." or "Internal Revenue Service." They then hand-check the footnotes and exclude any that do not refer to an audit, such as stating that the firm is not under audit. Bozanic, Hoopes, Thornock and Williams (2017) find that this measure of self-disclosed audits is related to IRS attention, while Fox and Wilson (2022) find that higher IRS attention following restatements is associated with self-disclosed audits. This measure allows us to directly examine whether the higher attention to Black-CEO led firms leads to self-disclosed audits at a similar or differential rate. An important caveat is that Black- and White-CEO led firms may differ in the extent to which they self-disclose audits. Thus, the results of this analysis should be interpreted with caution.[17]

We estimate the following structural equation model to conduct path analysis:

$$AUDIT\ REF_{i,t} = \alpha + \beta_1 * BlackCEO_{i,t} + \beta_2 * IRS\ Attention_{i,t} + Controls + Industry\ FE + Year\ FE + \epsilon_{i,t}$$

$$IRS\ ATTENTION_{\mathrm{i,t}} = \alpha + \gamma_1 * BlackCEO_{i,t} + Controls + Industry\ FE + Year\ FE + \epsilon_{i,t}$$

(3a & 3b)

The model includes the regression of *Audit Ref* on *BlackCEO* and *IRSAttention,* and that of *IRS Attention* on *BlackCEO*. *AuditRef* is an indicator variable that equals one if the firm made a reference to tax audit in their 10-k footnotes, and zero otherwise. All other variables are as previously defined in Equation (1). The controls used in this model are the same as the controls

[17] We thank Erin Towery for this suggestion, and thank Zahn Bozanic, Jeffrey Hoopes, Jacob Thornock, and Braden Williams for sharing IRS Attention and Self-Disclosed Audit data.

used in Equation (1). We also control for industry and year fixed-effects. This model is estimated using the main sample. We lose few observations due to missing *Audit Ref* data.

As shown in Figure 3, there are two paths to *AuditRef*: first is a direct path from *BlackCEO*, and the second is an indirect path from *BlackCEO* through *IRSAttention* as a mediating variable. An insignificant coefficient on the indirect path effect would indicate that IRS attention leads to audits at a similar rate for Black-CEO and White-CEO led firms. A positive coefficient would indicate that IRS attention to Black-CEO led firms leads to audits at an even higher rate than attention to White-CEO led firms, consistent with bias extending into the selection of audit targets.

Table (8) presents the results of the path analysis, with column (1) showing the results with standardized variables, and column (2) showing the results without the standardization. The direct effect of *BlackCEO* on *AuditRef* is insignificant. The indirect (mediated) effect of *BlackCEO* on *AuditRef* through *IRSAttention* is significant at 10% levels. This result indicates that the higher attention to Black-CEO led firms leads to a higher likelihood of self-disclosed audits, and suggests that higher IRS attention has spillover effects to subsequent IRS actions. The lack of a direct effect could also be seen as encouraging – it suggests that there is no additional/direct effect of CEO race on audit decisions, beyond the effect through IRS attention. To the extent that the IRS wants to take actions to address bias, these results suggest that the IRS would be well served in focusing on the earlier pre-audit attention phase.

5.4 Placebo Test: Asian-CEO Led Firms

Another alternative explanation for our findings is that the results are driven by unobservable differences in firm characteristics that are correlated with hiring of minority CEOs. While our 2SLS analysis partially addresses this, our instruments may be related to the hiring of minority CEOs more generally, rather than specifically Black CEOs. To test whether this explanation holds in our sample, we examine the attention paid to Asian-CEO led firms as

they are likely to share unobservable firm characteristics that drive the appointment of minority CEOs. Thus, to the extent that *minority* CEO appointment and associated unobservable characteristics drive higher IRS attention for Black-CEO led firms, we should find similarly higher attention for Asian-CEO led firms. However, Asian-related crime stereotypes differ significantly from those for Black individuals. Asian-Americans are often described as a "model minority." Research in several settings has shown that criminal justice outcomes for Asian defendants are similar to those of White defendants, in contrast to worse outcomes for Black defendants (see, e.g., Johnson and Betsinger 2009; Kutateladze, Andiloro, Johnson, and Spohn 2014; and Saperstein, Penner, and Kizer 2014).

Thus, examining Asian-CEO led firms serves two purposes: (1) it captures minority hiring related factors, (2) it addresses whether the higher attention is driven by the association of a race with crime – i.e., race-specific biases. Finding higher attention for Asian-CEO led firms than White-CEO led firms suggests that the hiring of minority CEOs is an important factor driving our main results. Finding similar attention for Asian-CEO led firms as White-CEO led firms suggests that race-related biases play an important role.

Results are reported in Table 9. We modify our full sample by dropping Black-CEO led firms and adding in Asian-CEO led firms. Columns (1) through (4) are defined as in Table 3. The modified main sample used in columns (2) – (4), for which we have tax-related control variables defined, includes 351 Asian-CEO firm-years and 9,775 White-CEO firm-years. In all cases, coefficient estimates for *Asian* are small and statistically insignificant. We find no difference in IRS attention between Asian-CEO led firms and White-CEO led firms. This result indicates that the higher attention to Black-CEO led firms is not driven by unobserved firm-level factors linked to appointment of minority CEOs, but is rather due to race-related biases.

5.5 UTB Tax Settlements

It might be that higher IRS attention to Black-CEO firms is economically motivated. To

examine whether the increased level of IRS attention and monitoring results in additional settlement revenue, we examine UTB settlement amounts (*Tax Settle*) in the subsequent three years, scaled by beginning UTB amounts, similar to prior work (Fox and Wilson 2022; Robinson, Stomberg, and Towery 2015). This variable captures cash settlements between firms and the IRS on firms' UTB positions. While our results reported in Section 4.2 show similar, or even lower, tax aggressiveness for Black-CEO led firms, it may still be the case that the IRS is able to obtain higher settlements from such firms. Higher settlements could be interpreted in two ways – either as justification for higher attention to Black-CEO led firms, or as a continuation of bias. However, failing to find higher settlements suggests that higher IRS attention and monitoring are unlikely to be economically motivated.

To examine whether the IRS obtains differential settlements from Black-CEO led firms, controlling for various firm- and tax-related factors, we estimate a regression similar to Equation 1, but using *Tax Settle* as the dependent variable. Similar to *Tax Monitor* regressions in section 5.2, we are able to extend the sample to 2017. Table 10 shows that Black-CEO led firms have *lower* settlements, suggesting that the higher IRS attention and monitoring does not yield increased revenue collections, and instead yields lower collections. The link between higher attention and lower collections for Black-CEO led firms is in contrast to the attention-collections links documented in prior literature. Bozanic, Hoopes, Thornock and Williams (2017) find that higher IRS attention is related to higher future settlements. Fox and Wilson (2022) similarly find that higher IRS attention related to restatements is associated with higher settlements. Our findings of *lower* settlements suggests that the IRS may have a lower bar when deciding to allocate resources towards Black-CEO led firms – monitoring them more heavily despite the likelihood of lower settlements.

5.6 CEO Characteristics and Other CEO-Correlated Variables

Finally, we examine whether other CEO characteristics or potentially omitted correlated

variables that might attract IRS attention are driving our results – i.e., whether attention placed on other correlated characteristics leads to disparate impact. We first focus on identifiable CEO characteristics. We augment Equation (1) with several CEO characteristics which IRS agents might observe, and which could affect their attention. We include the following personal characteristics: CEO age, tenure as CEO of the given firm, total work experience, overconfidence as measured using stock option holdings, and MBA education (e.g., Dyreng, Hanlon and Maydew 2010; Chyz, Gaertner, Kausar and Watson 2019; and James 2020). We also include measures of CEO compensation: total compensation, delta, and vega. We obtain data on CEO backgrounds from Execucomp and Boardex. We follow prior literature (e.g. Malmendier and Tate 2005; Coles, Daniel and Naveen 2006; Chyz et al. 2019) in defining all variables. Detailed definitions are provided in Appendix A.

Table 11, column (1) displays the results of the augmented model, utilizing the original entropy balancing based on covariates excluding CEO characteristics. Column (2) displays results with entropy balancing on all covariates, including the added CEO characteristics. Only three of the eight CEO characteristic variables are significantly related to IRS Attention – age (positive), MBA education in the entropy balanced model (negative), and vega (negative). The effect size for *BlackCEO* remains large even after the inclusion of these additional CEO Characteristic variables. In the fully entropy balanced model (column 2), the coefficient on *BlackCEO* is 0.367, similar to 0.329 in model (4) of Table 3. Thus, the IRS pays higher attention to Black CEO's even controlling for, and balancing on, these CEO characteristics.

It remains possible that other CEO or firm-related characteristics, which we have not included or for which we lack data, drive higher IRS Attention for Black-CEO led firms. To assess potential bias from an omitted variable, in particular, how strongly an omitted variable would have to relate to both Black and IRS Attention to explain our results, we follow the Impact Threshold of a Confounding Variable (ITCV) method of Frank (2000) and Larcker and

Rusticus (2010), similarly to Fich, Parrino and Tran (2023). We calculate the minimum partial correlations between a hypothetical omitted variable and both *BlackCEO* and *IRSAttention*. The product of both partial correlations gives us the minimum ITCV which would invalidate our inferences for the positive significant relation between CEO Race and IRS Attention.

We benchmark this ITCV against the impact scores of all control variables included in our analyses, including firm and CEO characteristics. We find that the ITCV of the hypothetical omitted variable is higher than the impact of all control variables except for *Size* and *UTB*, the two strongest determinants of IRS Attention. Thus, an omitted variable would have to be more strongly related to CEO Race and IRS Attention than any other variable included in our analyses, including *GAAPETR*, *ROA*, and CEO compensation metrics. Given that we control for known determinants of IRS Attention and given generally low partial correlations between firm and CEO characteristics and CEO race,[18] our results are likely to be robust to omitted variable bias.

5.7 Possible Effects of Outlier Black CEOs

An unavoidable limitation of our research is that there is a low number of Black CEOs among publicly traded firms. We utilize all Black CEOs in a sample of over 12,000 firm-years, however, this gives us only 81 firm-years with a Black CEO, from 25 firms. While this is sufficient for statistical inferences, it raises questions about external validity – are our results general to Black CEOs, and thus more likely to extend to other Black CEOs, or are they specific to one or two Black CEOs in our sample. In this section, we present statistics and analyses to assess whether outliers within our sample of Black CEOs are driving results. We first present descriptive information for the distribution of IRS Attention across Black CEO firm-years. We

[18] Out of the 18 firm and CEO characteristics included in our analysis, all have partial correlations with *BlackCEO* below 0.03, lower than the minimum partial correlation required between an omitted variable and *BlackCEO*. While certain firm and CEO characteristics are likely to increase the chances that a firm will have a Black CEO, no individual factor appears to drive CEO race. This is reasonable given the complexity of CEO appointment decisions.

then discuss results for a quantile regression, to minimize the effects of outliers. Together, these analyses suggest that our results are not driven by outliers within the Black CEO sample.

Figure 4 presents the distribution of raw IRS Attention for both White-CEO and Black-CEO led firm-years. Panel A presents the overall distribution, while Panel B presents the distribution for quintiles of IRS Attention. Focusing first on Panel A, we observe a higher density of extremely high attention observations for Black CEOs than White CEOs. However, the differences are not limited to extreme outliers. Firms with White CEOs have a higher likelihood of falling in the first two bins of IRS Attention than Black CEOs, with 7 or fewer downloads per firm-year, while firms with Black CEOs have a higher likelihood of falling in higher bins, for almost any range examined.

To better quantify whether differences in the distribution are isolated to the extreme high end, we determine the quintile rank of IRS Attention across all observations, *Rank(IRSAttention)*, pooling Black and White CEOs. Panel B presents the distributions of these quintile ranks, by CEO race. White CEOs are more likely than Black CEOs to fall in each of the lower three quintiles, while Black CEOs are more likely to fall in the two highest quintiles.

To assess whether outlier observations drive our results, we conduct two additional analyses. First, we estimate a quantile regression, in which we modify Equation (1) by replacing *IRSAttention* with *QuintileRank(IRSAttention).* Results remain similar, with a significantly positive coefficient on *BlackCEO* of 0.262. Second, we estimate Equation (1) excluding observations in the top quintile. Again, results remain similar, with a significantly positive coefficient on *BlackCEO*, of 0.309. Together, these results suggest that there is a general pattern of higher IRS attention to Black-CEO led firms, which is not driven by outliers. While the distributions of attention for White and Black CEOs overlap, differences in IRS Attention are not limited to extreme values.

6. Conclusion

Our study examines whether a CEO's race affects IRS regulatory enforcement activity, measured using IRS attention to SEC filings. We find that the IRS pays 39 – 40% higher attention to firms led by Black CEOs than comparable firms led by White CEOs. The most obvious statistical discrimination explanation for this result is that IRS enforcement is due to higher tax aggressiveness of Black-CEO led firms. However Black-CEO led firms are no more aggressive than White-CEO led firms.

Moreover, additional analyses are consistent with race-specific biases playing a causal role. Consistent with implicit bias theory and evidence, the effect is strongest when the IRS is resource constrained and weaker when it has more resources. Results are also robust in a two-stage least squares analysis using the percentage of black employees in an industry and firm-headquarters-state racial animus as instrumental variables.

The bias also appears to affect other stages of the IRS process, with significantly higher Tax Monitoring of UTB positions, and with higher IRS Attention leading to a higher likelihood of self-disclosed audits for Black-CEO led firms. Finally, additional analyses address possible alternative explanations. No similar pattern is found for Asian-CEO led firms, for which stereotypes and biases are likely to differ from those for Black CEOs. The IRS does not obtain higher tax settlements from Black-CEO led firms, suggesting that higher attention is not driven by economic motivations. Higher attention for Black-CEO led firms is not explained by other CEO characteristics such as age, tenure, overconfidence or compensation. Evaluation of a possible omitted variable bias suggests that results are unlikely to be explained by an omitted CEO or firm characteristic. And results are not driven by outlier high-attention observations.

Overall, our results provide evidence of a race-related bias affecting IRS enforcement activities. In the case of the IRS, our results suggest that efforts to address the impact of biases can best be targeted at the more open-ended and unstructured pre-audit analysis phase. In

addition, IRS resources appear to be a key mitigating factor – with the bias effect decreasing when agents have more resources. Going forward, it is an open question whether data analytics will reduce the impacts of such biases, or, conversely, act to codify biases. Such biases should be considered as data analytics use expands. In the current environment, with the IRS engaged in significant hiring and investment, it is important for the agency to be aware of these results.

More broadly, our results suggest that the effects of behavioral biases in regulatory enforcement warrant further analysis. A better understanding of enforcement biases can lead to more efficient and fair enforcement. The events surrounding the 2015 Congressional Report on IRS political group tax-exempt processing shows how awareness of a possible bias can lead to impactful changes in external monitoring, internal operating policies, and culture, that can all reduce institutional bias. The vital first step is shedding light on what biases exist.

The specific bias we examine is also a potentially important one. While there has been an increased focus on anti-Black racism in recent years, there is still much to learn, particularly regarding the effects of race-related biases in financial markets. Information regarding these biases is important for businesses and their stakeholders, so that they can be addressed, and financial markets can make the best use of the pool of human capital. Patterns like the one we document could even contribute to the low numbers of Black CEOs, if stakeholders anticipate increased enforcement attention. It is important to note that Black-CEO led firms in our sample do not end up paying higher taxes or paying higher settlement amounts, despite the higher IRS attention and monitoring that they face.

Overall, our results provide evidence that implicit biases can have a significant impact on the allocation of limited enforcement resources and attention, with resources being allocated towards Black-CEO led firms due to race-related biases. These results have direct implications to the IRS, firms, and stakeholders. We encourage researchers to expand upon this work, and to engage in a broader investigation and discussion of regulatory and enforcement biases.

REFERENCES

Ambrose, Brent W., James N. Conklin, and Luis A. Lopez. 2021. “Does Borrower and Broker Race Affect the Cost of Mortgage Credit?” *The Review of Financial Studies* 34(2): 790-826.

Balakrishnan, Karthik, Jennifer L. Blouin, and Wayne R. Guay. 2018. “Tax Aggressiveness and Corporate Transparency.” *The Accounting Review* 94(1):45–69.

Bartlett, Robert, Adair Morse, Richard Stanton, and Nancy Wallace. 2022. "Consumer-lending Discrimination in the FinTech Era." *Journal of Financial Economics* 143: 30-56.

Beck, Paul J., Jon S. Davis, and Woon-Oh Jung. 2000. "Taxpayer disclosure and penalty laws." *Journal of Public Economic Theory* 2(2): 243-272.

Begley, Taylor A., and Amiyatosh Purnanandam. 2021. "Color and Credit: Race, Regulation, and the Quality of Financial Services." *Journal of Financial Economics* 141: 48-65.

Belnap, Andrew, Jeffrey L. Hoopes, Edward L. Maydew, and Alex Turk. 2022. "Real Effects of Tax Audits." *Review of Accounting Studies* forthcoming.

Bergemann, Patrick, and Austin Wright. 2023. "From Social Alignment to Social Control: Reporting the Taliban in Afghanistan." *Sociological Science* 10: 286-331.

Bernile, Gennaro, Vineet Bhagwat, and P. Raghavendra Rau. 2017. "What doesn't kill you will only make you more risk-loving: Early-life disasters and CEO behavior." *The Journal of Finance* 72(1): 167-206.

Bertrand, Marianne, Dolly Chugh, and Sendhil Mullainathan. 2005. “Implicit Discrimination.” *American Economic Review* 95(2):94–98.

Buhutta, Neil, and Aurel Hizmo. 2020. "Do Minorities Pay More for Mortgages?" *The Review of Financial Studies* 34(2): 763-789.

Bloomfield, Robert J., Kristina Rennekamp, Blake Steenhoven, and Scott Stewart. "Penalities for Unexpected Behavior: Double Standards for Women in Finance." *The Accounting Review* 96(2): 107-125.

Bloomquist, Kim M. 2019. “Regional Bias in IRS Audit Selection.” *Tax Notes* March 4, 2019: 987-991.

Boland, Matthew, and David Godsell. 2020. “Local Soldier Fatalities and War Profiteers: New Tests of the Political Cost Hypothesis.” *Journal of Accounting and Economics* 70(1):101316.

Bozanic, Zahn, Jeffrey L. Hoopes, Jacob R. Thornock, and Braden M. Williams. 2017. “IRS Attention.” *Journal of Accounting Research* 55(1):79–114.

Bureau of Labor Statistics. 2019. "Labor force characteristics by race and ethnicity, 2018." Available at https://www.bls.gov/opub/reports/race-and-ethnicity/2018/home.htm, accessed Dec 2022.

Campbell, T. Colin, Michael Gallmeyer, Shane A. Johnson, Jessica Rutherford, and Brooke W. Stanley. 2011. "CEO optimism and forced turnover." *Journal of Financial Economics* 101(3): 695-712.

Chen, Te-Ping. September 28, 2020. Progress has stalled for Black CEOs. *The Wall Street Journal*, print edition.

Chen, Shuping, Xia Chen, Qiang Cheng, and Terry Shevlin. 2010. "Are Family Firms More Tax Aggressive than Non-Family Firms?" *Journal of Financial Economics* 95(1):41–61.

Chin, Mark J., David M. Quinn, Tasminda K. Dhaliwal, and Virginia S. Lovison. 2020. "Bias in the air: A nationwide exploration of teachers' implicit racial attitudes, aggregate bias, and student outcomes." *Educational Researcher* 49(8): 566-578.

Christensen, Dane M., Dan S. Dhaliwal, Steven Boivie, and Scott D. Graffin. 2015. "Top Management Conservatism and Corporate Risk Strategies: Evidence From Managers' Personal Political Orientation and Corporate Tax Avoidance." *Strategic Management Journal* 36: 1918-1938.

Chugh, Dolly. 2004. "Societal and Managerial Implications of Implicit Social Cognition: Why Milliseconds Matter." *Social Justice Research* 17(2): 203-222.

Chyz, James A. 2013. "Personally Tax Aggressive Executives and Corporate Tax Sheltering." *Journal of Accounting and Economics* 56: 311-328.

Chyz, James A., Fabio B. Gaertner, Asad Kausar, and Luke Watson. 2019. "Overconfidence and Corporate Tax Policy." *Review of Accounting Studies* 24: 1114-1145.

Committee on Finance, United States Senate. 2015. "Report 114-119. The Internal Revenue Service's Processing of 501(c)(3) and 501(c)(4) Applications for Tax-Exempt Status Submitted by 'Political Advocacy' Organizations From 2010-2013." *US Government Publishing Office.* Washington.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen. 2006. "Managerial Incentives and Risk-taking." *Journal of Financial Economics* 79: 431-468.

Cook, Alison, and Christy Glass. 2014. "Above the Glass Ceiling: When Are Women and Racial/Ethnic Minorities Promoted to CEO?" *Strategic Management Journal* 35(7):1080–89.

Davidson, Robert, Aiyesha Dey, and Abbie Smith. 2015. "Executives' "Off-the-job" Behavior, Corporate Culture, and Financial Reporting Risk." *Journal of Financial Economics* 117: 5-28.

DeBacker, Jason, Bradley T. Heim, and Anh Tran. 2015. "Importing Corruption Culture from Overseas: Evidence from Corporate Tax Evasion in the United States." *Journal of Financial Economics* 117: 122-138.

De Simone, Lisa, Lillian F. Mills, and Bridget Stomberg. 2019. "Using IRS Data to Identify Income Shifting to Foreign Affiliates." *Review of Accounting Studies* 24(2):694–730.

DeFond, Mark, David H. Erkens, and Jieying Zhang. 2017. “Do Client Characteristics Really Drive the Big N Audit Quality Effect? New Evidence from Propensity Score Matching.” *Management Science* 63(11):3628–49.

Desai, Mihir A., Alexander Dyck, and Luigi Zingales. 2007. "Theft and taxes." *Journal of Financial Economics* 84: 591-623.

Dougal, Casey, Pengjie Gao, William J. Mayew, and Christopher A. Parsons. 2019. “What’s in a (School) Name? Racial Discrimination in Higher Education Bond Markets.” *Journal of Financial Economics* 134(3):570–90.

Duchin, Ran, Mikhail Simutin, and Denis Sosyura. 2021. "The Origins and Real Effects of the Gender Gap: Evidence from CEOs' Formative Years." *The Review of Financial Studies* 34(2): 700-762.

Dyreng, Scott D., Michelle Hanlon, and Edward L. Maydew. 2010. “The Effects of Executives on Corporate Tax Avoidance.” *The Accounting Review* 85(4): 1163-1189.

Dyreng, Scott D., and Bradley P. Lindsey. 2009. "Using Financial Accounting Data to Examine the Effect of Foreign Operations Located in Tax Havens and Other Countries on U.S. Multinational Firms' Tax Rates." *Journal of Accounting Research* 47(5): 1283-1316.

Eberhardt, Jennifer L., Paul G. Davies, Valerie J. Purdie-Vaughns, and Sheri Lynn Johnson. 2006. “Looking Deathworthy: Perceived Stereotypicality of Black Defendants Predicts Capital-Sentencing Outcomes.” *Psychological Science* 17(5):383–86.

Eberhardt, J. L., P. A. Goff, V. J. Purdie, and P. G. Davies. 2004. “Seeing Black: Race, Crime, and Visual Processing.” *Journal of Personality and Social Psychology* 87(6): 876-893.

Eberhardt, J. 2019. “Biased: Uncovering the Hidden Prejudice That Shapes What We See, Think, and Do.” Penguin Books.

Edwards, Alexander, Casey Schwab, and Terry Shevlin. 2015. “Financial Constraints and Cash Tax Savings.” *The Accounting Review* 91(3):859–81.

Elzayn, Hadi, Evelyn Smith, Thomas Hertz, Arun Ramesh, Robin Fisher, Daniel E. Ho, and Jacob Goldin. 2023. "Measuring and Mitigating Racial Disparities in Tax Audits." Working Paper, Stanford University.

Fairlie, Robert W., Alicia Robb, and David T. Robinson. 2022. "Black and White: Access to Capital among Minority-Owned Startups." *Management Science* 68(4): 2377-2400.

Fich, Eliezer M., Robert Parrino, and Anh L. Tran. 2023. "When and How are Rule 10b5-1 Plans Used for Insider Stock Sales?" *Journal of Financial Economics* 149(1): 1-26.

Finley, Andrew R., and James Stekelberg. 2022. “Measuring Tax Authority Monitoring.” *Journal of the American Taxation Association*.

Fox, Zackery D., and Ryan J. Wilson. 2022. "Double Trouble? IRS Attention to Financial Accounting Restatements." *Review of Accounting Studies*:1-37.

Francis, Bill B., Iftekhar Hasan, Xian Sun, and Qiang Wu. 2016. “CEO Political Preference

and Corporate Tax Sheltering." *Journal of Corporate Finance* 38: 37-53.

Frank, Kenneth A. 2000. "Impact of a Confounding Variable on a Regression Coefficient." *Sociological Methods & Research* 29(2): 147-194.

Friedman, Henry. 2020. "Investor Preference for Director Characteristics: Portfolio Choice with Gender Bias." *The Accounting Review* 95(5): 117-147.

Gallemore, John, and Martin Jacob. 2020. "Corporate Tax Enforcement Externalities and the Banking Sector." *Journal of Accounting Research* 58(5):1117–59.

Gallemore, John, and Martin Jacob. 2023. "Federal Corporate Tax Enforcement and Local Business Activity." Working Paper, University of North Carolina and WHU – Otto Beisheim School of Management.

Garcia, Gilbert A., Scott E. Draeger, Paul Greff. July 7, 2021. "SEC Asset Management Advisory Committee – Subcommittee on Diversity and Inclusion: Recommendations for Consideration by the AMAC on July 7, 2021." 1-14.

Gerardi, Kristopher, Paul S. Willen, and David Hao Zhang. 2023. "Mortgage Prepayment, Race, and Monetary Policy." *Journal of Financial Economics* 147: 498-524.

Goh, Beng Wee, Jimmy Lee, Chee Yeow Lim, and Terry Shevlin. 2016. "The Effect of Corporate Tax Avoidance on the Cost of Equity." *The Accounting Review* 91(6):1647–70.

Goldfarb, Zachary A., and Karen Tumulty. May 10, 2013. " IRS admits targeting conservatives for tax scrutiny in 2012 election." *The Washington Post.* Available at https://www.washingtonpost.com/business/economy/irs-admits-targeting-conservatives-for-tax-scrutiny-in-2012-election/2013/05/10/3b6a0ada-b987-11e2-92f3-f291801936b8_story.html, accessed Dec 2022.

Goldin, Claudia, and Cecilia Rouse. 2000. "Orchestrating impartiality: The impact of" blind" auditions on female musicians." *American economic review* 90(4): 715-741.

Gow, Ian D., David F. Larcker, and Edward M. Watts. 2022. "Board Diversity and Shareholder Voting." *SSRN Scholarly Paper*. ID 3733054. Rochester, NY: Social Science Research Network.

Greenwald, Anthony G., Mahzarin R. Banaji, and Brian A. Nosek. 2015. "Statistically small effects of the Implicit Association Test can have societally large effects." *Journal of Personality and Social Psychology* 108(4): 553-561.

Greenwald, Anthony G., and Linda H. Krieger. 2006. "Implicit Bias: Scientific Foundations." *California Law Review* 94(4): 945-967.

Guedhami, Omrane, and Jeffrey Pittman. 2008. "The Importance of IRS Monitoring to Debt Pricing in Private Firms." *Journal of Financial Economics* 90: 38-58.

Hainmueller, Jens. 2012. "Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies." *Political Analysis* 20(1):25–46.

Hanlon, Michelle, and Shane Heitzman. 2010. "A Review of Tax Research." *Journal of Accounting and Economics* 50: 127-178.

Hanlon, Michelle, Jeffrey L. Hoopes, and Nemit Shroff. 2014. "The Effect of Tax Authority Monitoring and Enforcement on Financial Reporting Quality." *Journal of the American Taxation Association* 36(2): 137-170.

Hanlon, Michelle, Lillian F. Mills, and Joel B. Slemrod. 2007. "An Empirical Examination of Corporate Tax Noncompliance." in *Taxing Corporate Income in the 21st Century*. Cambridge, U.K.: Cambridge University Press.

Hanlon, Michelle, Kelvin Yeung, and Luo Zuo. 2022. "Behavioral Economics of Accounting: A Review of Archival Research on Individual Decision Makers." *Contemporary Accounting Research* 39(2): 1150-1214.

Hoffman, Kelly M., Sophie Trawalter, Jordan R. Axt, and M. Norman Oliver. 2016. "Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites." *Proceedings of the National Academy of Sciences* 113(16): 4296-4301.

Hoopes, Jeffrey L., Devan Mescall, and Jeffrey A. Pittman. 2012. "Do IRS Audits Deter Corporate Tax Avoidance?" *The Accounting Review* 87(5):1603–39.

Internal Revenue Manual (IRM). 2019. Available at https://www.irs.gov/irm, accessed August 2021.

Internal Revenue Service. 2015a. "IRS Whistleblower Program, Annual Report to the Congress." *Internal Revenue Service* Publication 5241.

Internal Revenue Service. 2015b. " Equity (Stock) - Based Compensation Audit Techniques Guide." Available at https://www.irs.gov/businesses/corporations/equity-stock-based-compensation-audit-techniques-guide, accessed November 2021

Internal Revenue Service. 2017. "Golden Parachute Payments Guide. Audit Techniques Guide." Available at https://www.irs.gov/pub/irs-utl/goldenparachuteatg.pdf, accessed August 2021.

Internal Revenue Service. 2021. "Nonqualified Deferred Compensation Audit Technique Guide." Available at https://www.irs.gov/pub/irs-pdf/p5528.pdf, accessed November 2021

James, Hui Liang. 2020. "CEO age and tax planning." *Review of Financial Economics* 38(2): 275-299.

Johnson, Brian D., and Sara Betsinger. 2009. "Punishing the 'Model Minority': Asian-American Criminal Sentencing Outcomes in Federal District Courts." *Criminology* 47(4): 1045-1090.

Koskinen, John A., Rosemary D. Marcuss, Barry W. Johnson, and Wayne K. Kei. 2014. "Internal Revenue Service Data Book, 2014." *Department of the Treasury*.

Kutateladze, Besiki L., Nancy R. Andiloro, Brian D. Johnson, and Cassia C. Spohn. 2014.

"Cumulative Disadvantage: Examining Racial and Ethnic Disparity in Prosecution and Sentencing." *Criminology* 52(3): 514-551.

Lampenius, Niklas, Terry Shevlin, and Arthur Stenzel. 2021. "Measuring Corporate Tax Rate and Tax base Avoidance of U.S. Domestic and U.S. Multinational Firms." *Journal of Accounting and Economics* 72: 1-26.

Larcker, David F., and Tjomme O. Rusticus. 2010. "On the Use of Instrumental Variables in Accounting Research." *Journal of Accounting and Economics* 49: 186-205.

Larcker, David F., and Brian Tayan. April 1, 2020. "Diversity in the C-Suite: The Dismal State of Diversity Among Fortune 100 Executives." *Stanford Closer Look Series*.

Law, Kelvin KF, and Lillian F. Mills. 2017. "Military Experience and Corporate Tax Avoidance." *Review of Accounting Studies* 22: 141-184.

Lin, Kenny Z., Lillian F. Mills, Fang Zhang, and Yongbo Li. 2018. "Do Political Connections Weaken Tax Enforcement Effectiveness?" *Contemporary Accounting Research* 35(4): 1941-1972.

Lisowsky, Petro. 2010. "Seeking Shelter: Empirically Modeling Tax Shelters Using Financial Statement Information." *The Accounting Review* 85(5):1693–1720.

Lisowsky, Petro, Leslie Robinson, and Andrew Schmidt. 2013. "Do Publicly Disclosed Tax Reserves Tell Us About Privately Disclosed Tax Shelter Activity?" *Journal of Accounting Research* 51(3):583–629.

Malmendier, Ulrike, and Geoffrey Tate. 2005. "CEO overconfidence and corporate investment." *The journal of finance* 60(6): 2661-2700.

Malmendier, Ulrike. 2018. "Behavioral corporate finance." *Handbook of Behavioral Economics: Applications and Foundations 1* Vol. 1, pp. 277-379. North-Holland.

McMullin, Jeff L., and Bryce Schonberger. 2020. "Entropy-Balanced Accruals." *Review of Accounting Studies* 1–36.

McMullin, Jeff, and Bryce Schonberger. 2022. "When good balance goes bad: A discussion of common pitfalls when using entropy balancing." *Journal of Financial Reporting* 7(1): 167-196.

Mills, Lillian F., Leslie A. Robinson, and Richard C. Sansing. 2010. "FIN 48 and Tax Compliance." *The Accounting Review* 85(5):1721–42.

Mills, Lillian F., and Richard C. Sansing. 2000. "Strategic Tax and Financial Reporting Decisions: Theory and Evidence." *Contemporary Accounting Research* 17(1):85–106.

Mock, Brentin. April 3, 2019. "IRS Audits Target the Wealth-Depleted Southern Black Belt." Available at https://www.bloomberg.com/news/articles/2019-04-03/map-reveals-more-irs-audits-in-southern-black-belt, accessed August 2021.

Nessa, Michelle, Casey M. Schwab, Bridget Stomberg, and Erin M. Towery. 2020. "How Do IRS Resources Affect the Corporate Audit Process?" *The Accounting Review*

95(2):311–38.

Nguyen, Duc Duy, Jens Hagendorff, and Arman Eshraghi. 2018. "Does a CEO's cultural heritage affect performance under competitive pressure?." *The Review of Financial Studies* 31(1): 97-141

Olsen, Kari Joseph, and James Stekelberg. 2016. "CEO Narcissism and Corporate Tax Sheltering." *The Journal of the American Taxation Association* 38(1): 1-22.

Pager, Devah, and Hana Shepherd. 2008. "The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets." *Annual review of sociology* 34: 181.

Pierson, Emma, Camelia Simoiu, Jan Overgoor, Sam Corbett-Davies, Daniel Jenson, Amy Shoemaker, Vignesh Ramachandran, Phoebe Barghouty, Cheryl Phillips, Ravi Shroff, and Sharad Goel. 2020. "A Large-scale Analysis of Racial Disparities in Police Stops Across the United States." *Nature Human Behavior* 4: 736-745.

Rego, Sonja Olhoft, and Ryan Wilson. 2012. "Equity Risk Incentives and Corporate Tax Aggressiveness." *Journal of Accounting Research* 50(3): 775-809.

Riddle, Travis, and Stacey Sinclair. 2019. "Racial disparities in school-based disciplinary actions are associated with county-level rates of racial bias." *Proceedings of the National Academy of Sciences* 116(17): 8255-8260.

Robinson, Leslie A., Bridget Stomberg, and Erin M. Towery. 2015. "One Size Does Not Fit All: How the Uniform Rules of FIN 48 Affect the Relevance of Income Tax Accounting." *The Accounting Review* 91(4):1195–1217.

Ryan, Michelle K., and S. Alexander Haslam. 2005. "The Glass Cliff: Evidence That Women Are Over-Represented in Precarious Leadership Positions." *British Journal of Management* 16(2):81–90.

Saperstein, Aliya, Andrew M. Penner, and Jessica M. Kizer. 2014. "The Criminal Justice System and the Racialization of Perceptions." *The Annals of the American Academy of Political and Social Science* 651: 104-121.

Seidman, Jeri K., Roshan Sinha, and Bridget Stomberg. 2023. "How Tax Authorities' Interest in Information Outside of Tax Returns Affects Corporate Communication: Insights from Tax Executives." Working Paper, University of Virginia and Indiana University.

Shroff, Nemit, Rodrigo S. Verdi, and Benjamin P. Yost. 2017. "When Does the Peer Information Environment Matter?" *Journal of Accounting and Economics* 64(2):183–214.

Sohoni, Tracy, and Melissa Rorie. 2021. "The whiteness of white-collar crime in the United States: Examining the role of race in a culture of elite white-collar offending." *Theoretical Criminology* 25(1): 66-87.

Stock, James, and Motohiro Yogo. 2005. "Asymptotic distributions of instrumental variables statistics with many instruments." *Identification and inference for econometric models: Essays in honor of Thomas Rothenberg* 6:109-120.

Stice-Lawrence, Lorien. 2021. "Monitoring Decisions and Frictions at the SEC." *SSRN Scholarly Paper*. ID 3485468. Rochester, NY: Social Science Research Network.

Transactional Records Access Clearing House. 2021. Corporate Tax Returns and Audits. Retrieved from https://trac.syr.edu/tracirs/newfindings/auditdata.php

Voigt, Rob, Nicholas P. Camp, Vinodkumar Prabhakaran, Willam L. Hamilton, Rebecca C. Hetey, Camilla M. Griffiths, David Jurgens, Dan Jurafsky, and Jennifer L. Eberhardt. 2017. "Language From Police Body Camera Footage Shows Racial Disparities in Officer Respect." *Proceedings of the National Academy of Science* 114(25): 6521-6526.

Vomfell, Lara, and Neil Stewart. 2021. “Officer Bias, Over-Patrolling and Ethnic Disparities in Stop and Search.” *Nature Human Behavior* 5(5): 566-575.

De Waegenaere, Anja, Richard Sansing, and Jacco L. Wielhouwer. 2015. "Financial Accounting Effects of Tax Aggressiveness: Contracting and Measurement." *Contemporary Accounting Research* 32(1): 223-242.

Werfel, Daniel I. 2023. Letter from the IRS Commissioner to U.S. Senate, May 15, 2023. https://www.irs.gov/pub/newsroom/werfel-letter-on-audit-selection.pdf.

Wilson, Ryan J. 2009. “An Examination of Corporate Tax Shelter Participants.” *The Accounting Review* 84(3):969–99.

Yost, Benjamin P., and Susan Shu. 2022. “Does Tax Enforcement Deter Managers’ Self-Dealing?” *Journal of Accounting and Economics*: 101512.

APPENDIX A. VARIABLE DEFINITIONS

Dependent variables	
IRS ATTENTION	Natural logarithm of 1 plus the number of times during year *t* that a computer with an IRS IP address downloaded a 10-K from EDGAR for firm *i*. (http://jeffreyhoopes.com/data/irsattentiondata.html)
TAX MONITOR	1 minus the sum of lapses in UTB due to expiry of stature of limitations from years *t* to *t+3* scaled by UTB in the year t, following Finley and Stekelberg (2022).
TAX SETTLE	Sum of UTB settlements from years t to t+3 scaled by UTB in the year t.
AUDIT REF	Equals 1 if the firm made a reference to tax audit in their 10-k footnotes, and 0 otherwise.
GETR_adj	The firm's mean industry-size GETR3 less the firm's GETR3, following Balakrishnan et al. 2019. GETR3 is defined as the three-year sum of total tax expense (TXT), measured from t to t+2, divided by the three-year sum of pretax book income (PI), measured from t to t+2. GETR3 values are winsorized at 0 and 1 and we require the three-year sum of PI to be positive.
CETR_adj	The firm's mean industry-size CETR3 less the firm's CETR3, following Balakrishnan et al. 2019. CETR3 is defined as the three-year sum of total cash taxes paid (TXPD), measured from t to t+2, divided by the three-year sum of pretax book income minus special items (PI-SPI), measured from t to t+2. CETR3 values are winsorized at 0 and 1 and we require the three-year sum of PI-SPI to be positive.
BTD	Pretax income (PI) minus current domestic and foreign tax expense (TXFED + TXFO) grossed up by 35% and adjusted for the change in NOLs (TLCF), scaled by assets (AT).
PBTD	Total book-tax differences (BTD) less temporary book-tax differences (TXDI/STR), where TXDI is total deferred tax expense and STR is statutory marginal tax rate.
UTB(Raw)	Year-end unrecognized tax benefits (UTBs) (TXTUBEND) scaled by total assets (AT).
UTB	UTB is within-sample quintile rank of *UTB(Raw)*
SHELTER	Tax shelter score developed by Wilson (2009). SHELTER = -4.86 + 5.20 * BTD + 4.08 * DAC - 1.41 * LEV + 0.76*Size + 3.51 * ROA + 1.72 * FI + 2.43 * R&D, where BTD is book income less taxable income scaled by lagged total assets, DAC is the discretionary accruals from the performance-adjusted modified cross-sectional Jones Model, LEV is long-term debt divided by total assets; Size is the log of total assets, ROA is pretax earnings divided by total assets, FI is foreign pretax earnings divided by lagged total assets, R&D is research and development expenditure divided by lagged total assets
HAVEN	Equals 1 if firm has at least one material operation in a tax haven country in year t listed in the firm's form 10-K, Exhibit 21, and 0 otherwise, following Dyreng and Lindsey (2009).
Race variables	
BLACK-CEO	Equals 1 if CEO of firm *i* in year *t* is black and 0 otherwise.
ASIAN-CEO	Equals 1 if CEO of firm *i* in year *t* is Asian and 0 otherwise.

Control variables: Firm Characteristics	
GAAPETR(Raw)	Total tax expense (TXT) divided by pretax book income (PI), winsorized at 0 and 1. We require pre-tax income (PI) to be positive. Defined following Bozanic, Hoopes, Thornock and Williams (2017).
GAAPETR	*GAAPETR* is the within-sample quintile rank of *GAAPETR(Raw)*.
SIZE	Natural logarithm of total assets (AT).
MB	Market value of equity (PRCC_F*CSHO) divided by book value of common equity (CEQ).
MNE	Equals 1 if firms with non-missing foreign pre-tax income (PIFO).
PPE	Net property, plant, and equipment (PPENT) scaled by lagged total assets (AT).
CASH	Cash holdings (CH) scaled by lagged total assets (AT).
INTANGIBLE	Intangible assets (INTAN) scaled by lagged total assets; missing values are set equal to 0.
INVENTORY	Inventory (INVT) scaled by lagged total assets (AT).
LEVERAGE	Long-term debt (DLTT) scaled by lagged total assets (AT).
R&D	R&D expense (XRD) scaled by sales (SALE); missing values are set equal to 0.
ROA	Pretax book income (PI) scaled by total assets (AT).
ROE	Net income (NI) scaled by shareholder's equity (SEQ).
SALESGROWTH	The difference between current-year sales (SALE) and prior-year sales, divided by prior-year sales.
Control Variables: CEO Characteristics	
LN(AGE)	Natural logarithm of CEO's age.
LN(CEOTENURE)	Natural logarithm of CEO tenure. We calculate tenure as the current year minus the year the CEO became CEO at the current firm.
LN(WORKEXP)	Natural logarithm of CEO's total work experience. We calculate total work experience as the current year minus the earliest recorded year the CEO held a position as an executive in Boardex database.
OVERCONFIDENCE	Equals 1 if CEO holds options that are, on average, at least 67% in the money at least twice in our sample period, beginning in the first year the CEO exhibits this behavior, and 0 otherwise. Average option moneyness is calculated as the average realizable value per option divided by the average exercise price. Average realizable value per option is calculated as OPT_UNEX_EXER_EST_VAL divided by OPT_UNEX_EXER_NUM and average exercise price is calculated as PRCC_F minus the average realizable value. This variable is defined as per prior literature (Campbell et al. 2010; Malmendier and Tate 2005).
Other Variables	
IRSRES	Obtained from Nessa Schwab, Stomberg and Towery (2020). Measured as either total hours spent by the IRS per returns audited, or the inflation adjusted enforcement budget per returns audited.
I(IRSRES)	Equals to 1 if IRSRES is above the median value of *IRSRES* and 0 otherwise. It is an indicator variable capturing high availability of IRS resources.

%BlackInd	The percentage of employees in the industry who are Black, as provided by the US Bureau of Labor Statistics Current Population Survey Labor Force Statistics, https://www.bls.gov/cps/cpsaat18.htm.
RacialAnimus	Equals 1 if firms are headquartered in one of the top 10 states for racial animus, as defined by the composite measure as in Dougal et al. (2019).

Figure 1. Example of One Source of IRS Information About CEO Race: CEO Images in Form Def 14A

Panel A. Excerpt from McDonald's Corp's 2012 Form Def 14A Filing

James A. Skinner, 67
Director since 2004
Class 2014 (retiring as a Director on June 30, 2012)
Other current directorships: Illinois Tool Works Inc. and Walgreen Co.

Career highlights
— McDonald's Corporation
> Vice Chairman and Chief Executive Officer (2004–June 30, 2012)
> Vice Chairman (2003–2004)

Experience and qualifications: Mr. Skinner provides a Company perspective in Board discussions about the business, relationships with key constituencies and stakeholders, competitive landscape, finance, senior leadership and strategic opportunities and challenges for the Company. In addition, as an independent director of two other public companies, Mr. Skinner has gained additional perspectives, including on governance and operational matters relevant to the Company.

Panel B. Excerpt from McDonald's Corp's 2013 Form Def 14A Filing

Donald Thompson, 50
Director since 2011
Class 2015
OTHER CURRENT DIRECTORSHIPS: Exelon Corporation (until April 23, 2013, as he will not stand for re-election at the Exelon 2013 Annual Meeting of Shareholders)

CAREER HIGHLIGHTS:
McDonald's Corporation
> President and Chief Executive Officer (2012–Present)
> President and Chief Operating Officer (2010–2012)
> President, McDonald's USA (2006–2010)
> Executive Vice President and Chief Operations Officer, McDonald's USA (2005–2006)

EXPERIENCE AND QUALIFICATIONS: Mr. Thompson provides a Company perspective in Board discussions about the business, particularly with respect to worldwide operations, competitive landscape, senior leadership and strategic opportunities and challenges for the Company. In addition, as an independent director of another public company, Mr. Thompson has gained additional perspectives, including on governance and operational matters relevant to the Company.

Panel C. Excerpt from Merck & Co's 2010 Form Def 14A Filing

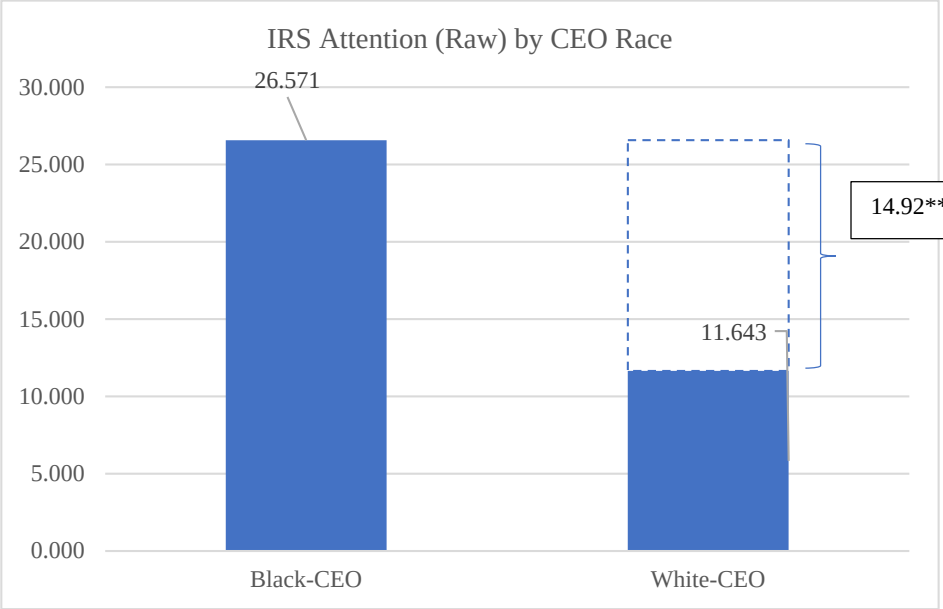
Name, Age and Year First Elected Director	Business Experience, Other Directorships or Significant Affiliations and Qualifications
 Richard T. Clark Age—63 2009	Chairman of the Board, President and Chief Executive Officer, Merck & Co., Inc., since November 2009. Director, Project HOPE; Chairman, Nominating & Compensation Committee of Pharmaceutical Research and Manufacturers of America (PhRMA) since 2009; Trustee, Washington & Jefferson College and The Conference Board. Mr. Clark served as Chairman, Federal Health Care Legislation Committee of PhRMA from 2008 to 2009 and Director, United Negro College Fund from 2007 to 2009. Mr. Clark also served as Chairman of the Board (April 2007 to November 2009), President and Chief Executive Officer (May 2005 to November 2009), President, Merck Manufacturing Division (June 2003 to May 2005) of Merck Sharp & Dohme Corp. (formerly known as Merck & Co., Inc.). In deciding to nominate Mr. Clark, the Board considered that Mr. Clark has broad managerial expertise, operational expertise and deep institutional knowledge, as well his track record of achievement, integrity and sound judgment demonstrated throughout his career with Merck Sharp & Dohme Corp. (formerly known as Merck & Co., Inc.) and as Chairman, President and Chief Executive Officer of the Company.

Panel D. Excerpt from Merck & Co's 2011 Form Def 14A Filing

 Kenneth C. Frazier Age—56 2011	President and Chief Executive Officer, Merck & Co., Inc. since January 2011, prior to which he was President since May 2010. Prior to his appointment as President, Mr. Frazier served as Executive Vice President and President, Global Human Health of the Company (since November 2009) and Merck Sharp & Dohme Corp. (2007 to 2009). Director, Exxon Mobil Corporation, The Pennsylvania State University and Cornerstone Christian Academy in Philadelphia, P.A.; Member, Council on Foreign Relations, the Council of the American Law Institute and the American Bar Association. Mr. Frazier also served as Executive Vice President and General Counsel (November 2006 to August 2007), and Senior Vice President and General Counsel (December 1999 to November 2006) of Merck Sharp & Dohme Corp. (formerly known as Merck & Co., Inc.). In deciding to nominate Mr. Frazier, the Board considered Mr. Frazier's broad managerial and operational expertise and deep institutional knowledge, as well as his track record of achievement, integrity and sound judgment demonstrated throughout his career with Merck & Co., Inc., Merck Sharp & Dohme Corp. and prior to joining Merck.

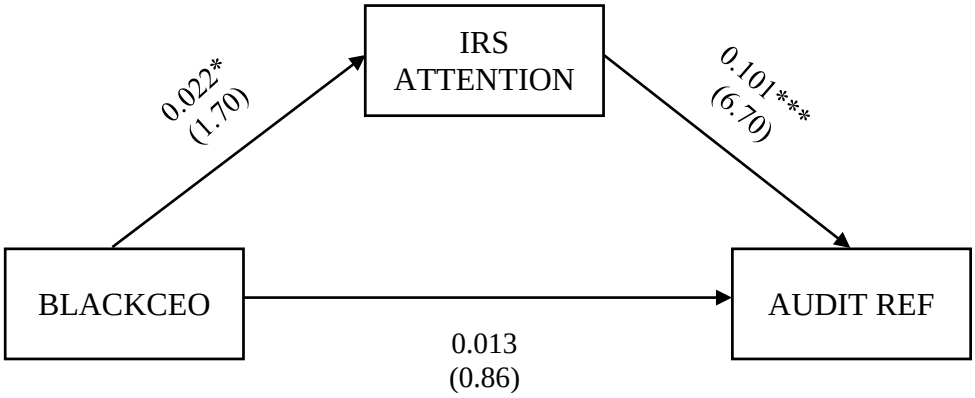
This figure displays excerpts from Def 14A filings, one of the ways that IRS agents may become aware of CEO race. These excerpts are taken from Def 14A forms, as filed with the SEC, for four firm-years included in our sample. Def 14A typically includes photographs and short biographies for all board members. These excerpts focus on the photographs and biographies for the given firms' CEOs. Panels A and C present firm-years with White CEOs, as classified by CEO photographs, and Panels B and D present firm-years with Black CEOs, as classified by CEO photographs. All filings were obtained from search of the SEC Edgar database, https://www.sec.gov/edgar.

Figure 2. IRS Attention (Raw) by CEO Race



This figure depicts the attention paid by IRS to Black-CEO led firms and White-CEO led firms. IRS Attention (Raw) is the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The X-axis provides the race of the CEO, while the Y-axis measures the number of 10-K downloads by IRS. We perform t-test for the difference of means. *, **, ***, denote significance at 10%, 5% and 1% levels.

Figure 3. Path Analysis of IRS Attention on Audit Reference

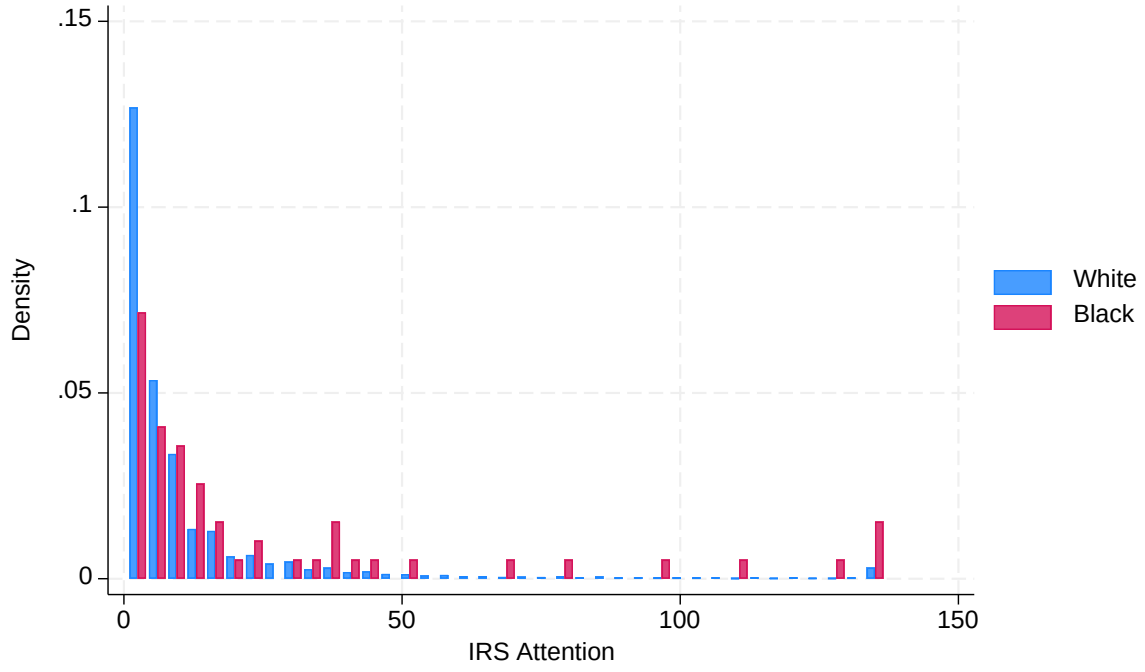


Calculation for indirect path effects	0.002*	(1.66)
Percentage of total effect through indirect path	15%	

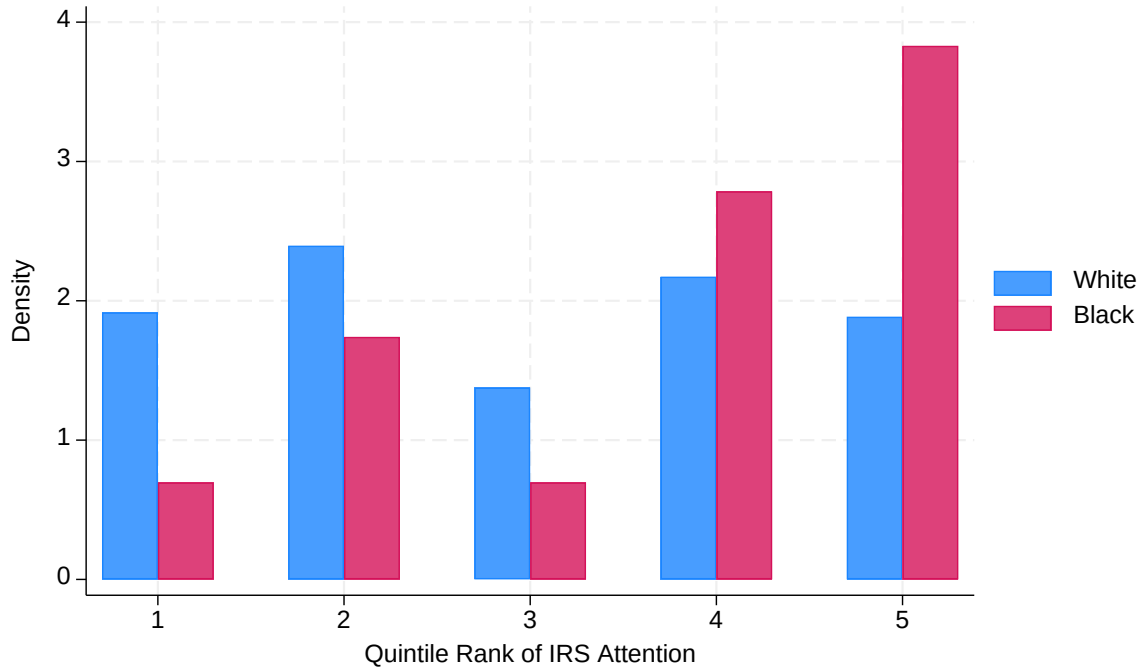
This figure presents coefficient estimates from estimating direct and indirect effects of having Black-CEOs on mentions of being under tax audit using path analysis implemented via structural equation modelling. *Audit Ref* is an indicator variable equal to one if the firm made a reference to tax audit in their 10-k footnotes, and zero otherwise. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. The mediating variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The figure also presents the calculation for indirect path effects through *IRS Attention*. The indirect effect is the product of effect of *BlackCEO* on *IRS Attention*, and effect of *IRS Attention* on *Audit Ref*. These coefficients are obtained by estimating the system of equations, (3a) and (3b), using standardized variables. *, **, ***, denote significance at 10%, 5% and 1% levels. Standard errors are presented in parentheses.

Figure 4. Distribution of IRS Attention (Raw) by CEO Race

Panel A. Full Distribution



Panel B. Quintile Distribution



This figure depicts the attention paid by IRS to Black-CEO led firms (red bars) and White-CEO led firms (blue bars). IRS Attention (Raw) is the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. In Panel A, the X-axis provides the number of raw IRS downloads. Bars represent bins with an approximate width of 3.5 downloads. Panel B presents quintiles of IRS Attention, with cut-offs determined by the full sample. The Y-axis measures the probability density for the given bin for the given sample.

Table 1. Sample Selection

This table presents details of sample selection. Column (1) displays the total number of firm-year observations, while column (2) displays the number of firm-year observations that have a Black-CEO. After merging the sample of S&P 1500 firms from 2008 – 2014 with observations with either Black- or White-CEO led firms, and requiring the presence of IRS attention and firm-level control data, we are left with the full sample of 12,058 firm-year observations. The full sample does not require the presence of tax-aggressiveness related control variables, and has 81 Black-CEO firm-year observations. Tax aggressiveness control variable *GAAPETR* calculation requires pre-tax income to be positive, further reducing the sample. The main sample including tax aggressiveness measures is 9,831 firm-year observations, and has 56 Black-CEO led firm-year observations.

	Firm-year observations (1)	Black CEO firm-year observations (2)
2008-2014 S&P 1500	14,201	91
Drop CEOs with ambiguous race information	(33)	91
Retain only Black and White CEOs	(746)	91
Drop missing IRS attention data	(465)	85
Drop missing firm control variables	(899)	81
Full sample without tax aggressiveness variables	**12,058**	**81**
Drop missing tax aggressiveness control variables	(2,227)	56
Main sample including tax aggressiveness variables	**9,831**	**56**

Table 2. Summary Statistics

This table presents descriptive statistics (pre-entropy balancing) for the main variables used in our analyses. We display the statistics for the main sample obtained by merging S&P 1500 firms from 2008–2014 having Black or White CEOs with IRS attention data, and firm- and tax aggressiveness- control variables. Variable definitions are provided in Appendix A. Panel A reports statistics for the main sample. Panel B reports statistics for Black-CEO and White-CEO-led firm-years separately. The number of observations for *AuditRef* is lower due to missing values. *TaxMonitor* and *TaxSettle* have different number of observations as these come from a sample of S&P 1500 firms from 2008–2017 with Black or White CEOs, with all necessary data. Differences and significance of the difference in means between Black-CEO and White-CEO firm-years are provided for all the variables. *, **, ***, denote significance at 10%, 5% and 1% levels. All continuous variables are winsorized at the 1st and 99th percentile.

Panel A. Main Sample, with tax control variables defined

Variables	N	Mean	SD	P25	Median	P75
IRS_ATTENTION	9,831	1.822	1.107	1.099	1.609	2.485
IRS_ATTENTION (Raw)	9,831	11.728	21.651	2.000	4.000	11.000
SIZE	9,831	7.911	1.682	6.704	7.809	8.975
MB	9,831	2.850	3.315	1.363	2.097	3.394
MNE	9,831	0.569	0.495	0.000	1.000	1.000
CASH	9,831	0.124	0.139	0.024	0.077	0.173
INVENTORY	9,831	0.099	0.128	0.001	0.047	0.154
LEVERAGE	9,831	0.215	0.209	0.032	0.175	0.327
R&D	9,831	0.027	0.055	0.000	0.000	0.022
ROA	9,831	0.092	0.077	0.035	0.073	0.126
GAAPETR	9,831	3.000	1.414	2.000	3.000	4.000
UTB	9,831	2.890	1.523	1.000	3.000	4.000
GAAPETR (Raw)	9,831	0.293	0.163	0.227	0.321	0.372
UTB (Raw)	9,831	0.007	0.012	0.000	0.003	0.009
TAX MONITOR	8,803	0.661	0.414	0.478	0.802	0.980
TAX SETTLE	8,803	0.343	0.553	0.000	0.145	0.454
AUDIT REF	9,293	0.428	0.495	0.000	0.000	1.000

Panel B. Subsamples by CEO Race, for Main Sample with tax control variables defined

	BLACK-CEO LED FIRMS		WHITE-CEO LED FIRMS			
Variables	**N**	**Mean**	**N**	**Mean**	**Difference**	**Significance**
IRS_ATTENTION	56	2.511	9,775	1.818	0.693	***
IRS_ATTENTION (Raw)	56	26.571	9,775	11.643	14.928	***
SIZE	56	8.732	9,775	7.906	0.826	***
MB	56	2.481	9,775	2.852	-0.371	
MNE	56	0.607	9,775	0.568	0.039	
CASH	56	0.099	9,775	0.124	-0.025	
INVENTORY	56	0.048	9,775	0.100	-0.052	***
LEVERAGE	56	0.217	9,775	0.215	0.002	
R&D	56	0.035	9,775	0.027	0.008	
ROA	56	0.089	9,775	0.092	-0.003	
GAAPETR	56	2.786	9,775	3.001	-0.215	
UTB	56	3.536	9,775	2.886	0.650	***
GAAPETR (Raw)	56	0.301	9,775	0.293	0.008	
UTB (Raw)	56	0.010	9,775	0.007	0.003	*
TAX MONITOR	65	0.841	8738	0.659	0.182	***
TAX SETTLE	65	0.299	8738	0.343	-0.044	
AUDIT REF	53	0.642	9240	0.427	0.215	***

Table 3. IRS Attention of Black-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating Equation (1) using entropy balancing. The dependent variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The main explanatory variable of interest is *BlackCEO*, which is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. Column (1) shows the results for the full sample, without requiring tax aggressiveness control variables. Column (2) is the same as column (1) but limits the observations to the main sample for which tax aggressiveness control variables are required to be available. Column (3) includes tax-aggressiveness control variables in the main sample, while column (4) further includes industry fixed effects. All columns include year fixed effects. Standard errors are clustered at firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)	(3)	(4)
VARIABLES	*IRS Attention*	*IRS Attention*	*IRS Attention*	*IRS Attention*
BLACKCEO	0.399***	0.340**	0.340**	0.329**
	(3.35)	(2.27)	(2.38)	(2.11)
SIZE	0.319***	0.340***	0.333***	0.400***
	(11.88)	(12.15)	(12.11)	(14.33)
MB	-0.002	0.007	0.008	0.007
	(-0.17)	(0.44)	(0.50)	(0.72)
MNE	0.694***	0.751***	0.587***	0.466***
	(5.82)	(4.39)	(3.45)	(3.14)
CASH	-0.138	-1.091	-1.065	-0.628
	(-0.24)	(-1.51)	(-1.59)	(-1.28)
INVENTORY	0.336	0.126	-0.053	0.051
	(1.24)	(0.22)	(-0.10)	(0.08)
LEVERAGE	0.035	-0.233	-0.263	-0.204
	(0.15)	(-0.87)	(-1.02)	(-0.67)
R&D	0.516	-0.042	-1.038	-0.745
	(0.96)	(-0.04)	(-0.99)	(-0.74)
ROA	-0.202	1.494*	1.809**	1.421***
	(-0.51)	(1.95)	(2.34)	(3.11)
GAAPETR			-0.131***	-0.110***
			(-3.40)	(-4.26)
UTB			0.117**	0.041
			(2.54)	(1.13)
Observations	12,058	9,831	9,831	9,831
Adjusted R-squared	0.441	0.510	0.537	0.596
Industry FE	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes

Table 4. Tax Aggressiveness of Black-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating Equation (2) using entropy balancing. The dependent variables are measures covering the entire spectrum of tax avoidance, with column (1) representing legitimate tax-reducing positions as captured by total book tax difference (*BTD)* to column (7) capturing tax haven (*Haven*) usage. The dependent variable in column (2) is permanent book tax (*PBTD*), column (3) is industry and size adjusted GAAP effective tax rate (*GETR_adj*), column (4) is industry and size adjusted cash effective tax rate (*CETR_adj*), column (5) is unrecognized tax benefit (*UTB*) capturing positions that could be challenged by the IRS, and in column (6) is the estimated probability that a firm has entered into tax shelters (*Shelter*). The main explanatory variable of interest is *BlackCEO*, which is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. All the columns contain observations limited to the main sample for which tax aggressiveness control variables are available. All columns include year and industry fixed effects, and the standard errors are clustered at the firm-level and shown in parentheses Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	*BTD*	*PBTD*	*GETR_adj*	*CETR_adj*	*UTB*	*Shelter*	*Haven*
BLACKCEO	0.003	-0.000	-0.050*	-0.021	0.001	0.051	0.106
	(0.35)	(-0.02)	(-1.76)	(-0.89)	(0.40)	(0.53)	-1.35
SIZE	-0.002	-0.001	0.012**	0.012*	0.002***	0.758***	0.104***
	(-0.70)	(-0.39)	(1.97)	(1.92)	(4.63)	(27.20)	-5.6
MB	-0.000	-0.000	-0.004*	0.005**	-0.000***	0.001	-0.003
	(-0.10)	(-0.21)	(-1.77)	(2.42)	(-3.43)	(0.07)	(-0.53)
MNE	-0.002	-0.003	-0.004	0.009	0.001	0.087	0.252***
	(-0.27)	(-0.50)	(-0.16)	(0.48)	(1.10)	(1.16)	-3.14
CASH	-0.045*	-0.049*	0.028	0.173**	0.016***	0.393	0.093
	(-1.87)	(-1.94)	(0.64)	(2.32)	(2.70)	(1.00)	-0.35
INVENTORY	0.032	0.061**	0.072	0.075	-0.013**	1.635***	-0.743**
	(1.02)	(2.12)	(1.20)	(0.84)	(-2.39)	(3.86)	(-2.18)
LEVERAGE	0.070***	0.059***	-0.130*	0.076**	-0.004	-0.589***	0.008
	(3.34)	(3.80)	(-1.91)	(1.98)	(-1.52)	(-3.23)	-0.05
R&D	0.027	0.104*	-0.135	-0.196	0.071***	0.421	0.976*
	(0.49)	(1.92)	(-0.85)	(-0.91)	(5.97)	(0.49)	-1.82
ROA	0.282***	0.233***	-0.229**	-0.108	0.011	5.450***	-0.22
	(6.31)	(6.18)	(-2.50)	(-0.77)	(1.17)	(10.06)	(-0.44)
Observations	9,831	9,831	8,817	8,598	9,831	8,585	8,585
Adjusted R-squared	0.309	0.225	0.266	0.217	0.494	0.659	0.659
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5. Effect of Resources on IRS Attention of Black-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating a modified version of Equation (1) using entropy balancing. The dependent variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. *IRSRES* is measured by the total IRS working hours spent per audited return in column (1), while in column (2), it is measured as the inflation adjusted enforcement budget per audited return, both measures obtained from Nessa, Schwab, Stomberg, and Towery (2020). *I(IRSRES)* is an indicator variable set to 1 for years in which *IRSRES* was higher than the median value in our sample, and zero otherwise. The main explanatory variable of interest is the interaction of *BlackCEO* with *I(IRSRES)*. All the columns contain observations limited to the main sample for which tax aggressiveness control variables are available. All columns include year and industry fixed effects, and the standard errors are clustered at the firm-level and shown in parentheses Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)
IRS RESOURCES MEASURE	Total Hours per Audited Return	Inflation Adjusted Enforcement Budget per Audited Return
VARIABLES	*IRS ATTENTION*	*IRS ATTENTION*
BLACKCEO	0.446**	0.439***
	(2.48)	(2.69)
BLACKCEO I(IRSRES)*	-0.400**	-0.408***
	(-2.34)	(-2.83)
SIZE	0.401***	0.398***
	(14.15)	(14.67)
MB	0.008	0.007
	(0.79)	(0.76)
MNE	0.470***	0.464***
	(3.04)	(3.18)
CASH	-0.613	-0.646
	(-1.27)	(-1.27)
INVENTORY	0.172	0.054
	(0.29)	(0.09)
LEVERAGE	-0.204	-0.196
	(-0.69)	(-0.62)
R&D	-0.620	-0.758
	(-0.63)	(-0.78)
ROA	1.418***	1.463***
	(3.12)	(3.32)
GAAPETR	-0.114***	-0.110***
	(-4.44)	(-4.38)
UTB	0.039	0.040
	(1.03)	(1.23)
Observations	9,831	9,831
Adjusted R-squared	0.601	0.601
Industry FE	Yes	Yes
Year FE	Yes	Yes

Table 6. Two-Stage Least Squares (2SLS) Analysis

This table presents the results of a two-stage least squares analysis using two instrumental variables for *BlackCEO*. The two instruments are *%BlackInd* measured as the percentage of employees in the industry who are Black, and *RacialAnimus* which is an indicator variable equal to 1 if firms are headquartered in one of the top 10 states for racial animus, as defined by the composite measure in Dougal et al. (2019). Column (1) presents results of the first stage regression, in which the dependent variable is *BlackCEO*, an indicator variable which takes the value 1 if the CEO of the firm in the given year is Black. Column (2) presents results of the second stage regression, in which the dependent variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The main explanatory variable of interest is *Pred(BlackCEO)*, which is the predicted value of *BlackCEO* obtained from the first stage. Both columns contain observations limited to the main sample for which tax aggressiveness control variables are available. All columns include year and industry fixed effects, and the standard errors are clustered at the firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)
	First-stage	**Second-stage**
VARIABLES	*BLACKCEO*	*IRS ATTENTION*
%BLACKIND	0.049**	
	(2.17)	
RACIALANIMUS	-0.262***	
	(-3.29)	
Pred(BLACKCEO)		1.027*
		(1.91)
SIZE	0.018	0.386***
	(0.68)	(11.89)
MB	-0.016***	0.019
	(-3.30)	(1.51)
MNE	-0.004	0.469***
	(-0.09)	(3.04)
CASH	-0.094	-0.556
	(-0.38)	(-1.03)
INVENTORY	0.880***	-0.594
	(2.63)	(-0.74)
LEVERAGE	-0.012	-0.192
	(-0.08)	(-0.54)
R&D	1.175	-1.552
	(1.61)	(-1.52)
ROA	-0.169	1.527***
	(-0.58)	(3.47)
GAAPETR	0.005	-0.114***
	(0.28)	(-4.30)
UTB	-0.050***	0.074
	(-2.63)	(1.54)
Under-identification Test		
Kleibergen-Paap LM statistic	9.997*** (p < 0.01)	
Weak Instrument Test		
Cragg-Donald Wald F-statistic	72.01*** (p < 0.01)	
Observations	9,753	9,753
Adjusted R-squared	0.510	0.361
Industry FE	Yes	Yes
Year FE	Yes	Yes

Table 7. Tax Monitoring of Black-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating Equation (1) by replacing *IRS Attention* with an alternate measure for monitoring by the IRS, *Tax Monitor*, estimated using entropy balancing. This table uses an extended sample consisting of S&P 1500 firms from 2008–2017 with Black or White CEOs, with all necessary data. The dependent variable is *Tax Monitor,* which captures IRS attention to unrecognized tax benefits (UTB) positions of the company, measured as one minus the lapses in UTB due to expiry of the statute of limitations in the period t to t+3, divided by the UTB in the year t. The main explanatory variable of interest is *BlackCEO* which is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. Column (1) shows the results for the extended full sample, without requiring tax aggressiveness control variables. Column (2) is the same as column (1) but limits the observations to the sample for which tax aggressiveness control variables are available. Column (3) includes tax aggressiveness control variables, while column (4) further includes industry fixed effects. All columns include year fixed effects. Standard errors are clustered at firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)	(3)	(4)
VARIABLES	*TAX MONITOR*	*TAX MONITOR*	*TAX MONITOR*	*TAX MONITOR*
BLACKCEO	0.085**	0.088***	0.088***	0.089***
	(2.33)	(3.17)	(3.16)	(3.69)
SIZE	0.041***	0.036***	0.034***	0.034***
	(4.26)	(5.01)	(5.15)	(5.49)
MB	-0.001	0.000	0.000	0.003*
	(-0.32)	(0.11)	(0.18)	(1.69)
MNE	-0.120***	-0.069*	-0.066	-0.037
	(-2.98)	(-1.67)	(-1.54)	(-1.19)
CASH	0.073	0.160	0.110	-0.066
	(0.63)	(1.52)	(1.10)	(-0.88)
INVENTORY	-0.152	-0.243	-0.235	-0.011
	(-0.88)	(-1.39)	(-1.40)	(-0.07)
LEVERAGE	-0.018	-0.089	-0.101	-0.064
	(-0.20)	(-1.15)	(-1.32)	(-1.06)
R&D	0.277	0.380***	0.322**	0.234*
	(1.44)	(3.12)	(2.06)	(1.76)
ROA	0.168	0.213	0.164	0.239
	(0.93)	(1.15)	(0.87)	(1.56)
GAAPETR			0.012	0.007
			(1.39)	(1.23)
UTB			0.015	0.016
			(1.23)	(1.46)
Observations	10,573	8,803	8,803	8,803
Adjusted R-squared	0.115	0.111	0.117	0.199
Industry FE	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes

Table 8. Path Analysis of the Effects of IRS Attention on Self-Disclosed Audit

This table presents the results of estimating direct and indirect effects of having Black-CEOs on mentions of being under tax audit using path analysis implemented via structural equation modelling as shown in Equations 3a and 3b. *Audit Ref* is an indicator variable equal to 1 if the firm made a reference to a current-year tax audit in their 10-k footnotes, and zero otherwise. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. The mediating variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. Figure 3 provides a visual representation of the paths. The direct path refers to the direct (unmediated) effect of *BlackCEO* on *Audit Ref*. The mediated path refers to the path from *BlackCEO* to *Audit Ref* via the mediating variable - *IRS Attention.* Our coefficient of interest is the indirect effect, i.e. the product of the effect of *BlackCEO* on *IRS Attention*, and the effect of *IRS Attention* on *Audit Ref*. Column (1) contains the model with all standardized variables, while column (2) is without the standardization. Both columns contain observations limited to the main sample for which tax aggressiveness control variables are available. The control variables in both columns correspond to the control variables used in Equation (1) as seen in Table 3. All columns include year and industry fixed effects, and the standard errors are clustered at the firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

VARIABLES	(1) Standardized variables	(2) Unstandardized variables
Direct path		
p(BLACKCEO, AUDIT REF)	0.013	0.085
	(0.86)	(0.86)
Mediated path		
I: p(BLACKCEO, IRS ATTENTION)	0.022*	0.325*
	(1.70)	(1.70)
II: p(IRS ATTENTION, AUDIT REF)	0.101***	0.046***
	(6.70)	(6.70)
Indirect effect (I*II)	0.002*	0.015*
	(1.66)	(1.66)
Observations	9,293	9,293
Controls	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes

Table 9. IRS Attention of Asian-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating Equation (1), replacing *BlackCEO* with *AsianCEO*, and estimated using entropy balancing. The sample consists of S&P 1500 firms with Asian, rather than Black, and White CEOs, with all necessary data. The dependent variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The main explanatory variable of interest is *AsianCEO*, which is an indicator variable equal to 1 for firm-years with Asian-American individuals as CEO and zero otherwise. Column (1) shows the results for the modified full sample, without requiring tax control variables. Column (2) is the same as column (1) but limits the observations to the modified main sample for which tax aggressiveness control variables are available. Column (3) includes tax aggressiveness control variables in the modified main sample, while column (4) further includes industry fixed effects. All columns include year fixed effects. Standard errors are clustered at firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)	(3)	(4)
VARIABLES	*IRS Attention*	*IRS Attention*	*IRS Attention*	*IRS Attention*
ASIANCEO	-0.051	0.012	0.012	0.043
	(-0.80)	(0.16)	(0.17)	(0.62)
SIZE	0.273***	0.296***	0.282***	0.293***
	(11.33)	(10.38)	(10.02)	(10.54)
MB	0.000	-0.006	-0.005	-0.004
	(0.02)	(-0.64)	(-0.54)	(-0.39)
MNE	0.463***	0.478***	0.274***	0.160**
	(6.65)	(6.11)	(3.66)	(2.21)
CASH	-0.217	-0.288	-0.374**	-0.331*
	(-1.53)	(-1.63)	(-2.10)	(-1.80)
INVENTORY	0.379	0.393	0.262	-0.698*
	(1.32)	(1.27)	(0.86)	(-1.65)
LEVERAGE	0.010	0.125	0.056	-0.125
	(0.06)	(0.70)	(0.32)	(-0.76)
R&D	0.633***	0.918**	0.156	0.053
	(2.88)	(2.00)	(0.35)	(0.10)
ROA	0.360*	1.331***	0.855**	0.298
	(1.81)	(3.18)	(2.15)	(0.79)
GAAPETR			-0.024	-0.030
			(-1.11)	(-1.55)
UTB			0.134***	0.095***
			(5.83)	(4.56)
Observations	12,438	10,126	10,126	10,126
Adjusted R-squared	0.279	0.275	0.297	0.335
Industry FE	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes

Table 10. Tax Settlements of Black-CEO Led Firms

This table presents the results of ordinary least squares regressions estimating Equation (1) by replacing *IRS Attention* with *Tax Settle* as the dependent variable, estimated using entropy balancing. This table uses an extended sample consisting of S&P 1500 firms from 2008–2017 with Black or White CEOs, with all necessary data. The dependent variable *Tax settle* is the settlement amount of UTB in the years from t to t+3, scaled by UTB in year t. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. Column (1) shows the results for the extended full sample, without requiring tax aggressiveness control variables. Column (2) is the same as column (1) but limits the observations to the sample for which tax aggressiveness control variables are available. Column (3) includes tax aggressiveness control variables, while column (4) further includes industry fixed effects. All columns include year fixed effects. Standard errors are clustered at firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)	(3)	(4)
VARIABLES	*TAX SETTLE*	*TAX SETTLE*	*TAX SETTLE*	*TAX SETTLE*
BLACKCEO	-0.087	-0.038	-0.038	-0.132***
	(-1.51)	(-0.55)	(-0.54)	(-3.31)
SIZE	0.030**	0.029*	0.032**	0.015
	(2.57)	(1.88)	(2.04)	(1.39)
MB	0.001	-0.001	-0.001	-0.037
	(0.35)	(-0.31)	(-0.40)	(-1.50)
MNE	0.084	0.049	0.058	0.052***
	(1.18)	(0.62)	(0.76)	(3.50)
CASH	-0.307	-0.398	-0.364	-0.007*
	(-1.03)	(-1.02)	(-1.04)	(-1.68)
INVENTORY	0.215	0.116	0.106	0.116*
	(1.40)	(0.55)	(0.49)	(1.74)
LEVERAGE	-0.006	0.049	0.054	0.155
	(-0.05)	(0.41)	(0.41)	(0.94)
R&D	-0.204	-0.115	0.048	0.739*
	(-0.79)	(-0.25)	(0.09)	(1.89)
ROA	0.250*	0.543	0.573	0.060
	(1.81)	(1.49)	(1.45)	(0.57)
GAAPETR			-0.002	0.661
			(-0.12)	(1.29)
UTB			-0.025	0.018
			(-0.99)	(0.06)
Observations	10,573	8,803	8,803	8,803
Adjusted R-squared	0.055	0.048	0.052	0.167
Industry FE	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes

Table 11. IRS Attention and CEO Characteristics

This table presents the results of ordinary least squares regressions estimating Equation (1) augmented to include CEO characteristics, using entropy balancing. The dependent variable is *IRS Attention*, which is measured as the natural log of one plus the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. *Ln(Age)*, *Ln(CEOTenure)*, *Ln(WorkExp)*, *Overconfidence*, and *MBA* measure CEO personal characteristics. *Ln(TotalComp)*, *Delta*, and *Vega* are measures of CEO compensation characteristics. Firm-year Controls, unreported for brevity, include *Size*, *MB*, *MNE*, *Cash*, *Inventory*, *Leverage*, *R&D*, *ROA*, *GAAPETR*, AND *UTB*. The sample is balanced on covariates included in Equation (1), including all Firm-year controls, in column (1), and additionally balanced on CEO characteristics in column (2). Both columns contain observations limited to the main sample for which tax aggressiveness control variables are available. Both columns include year and industry fixed effects. Standard errors are clustered at the firm-level and shown in parentheses. Variable definitions are provided in Appendix A. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using two-tailed tests.

	(1)	(2)
VARIABLES	*IRS ATTENTION*	*IRS ATTENTION*
BLACKCEO	0.256**	0.367***
	(2.05)	(3.60)
LN(AGE)	0.658*	0.780*
	(1.77)	(1.84)
LN(CEOTENURE)	-0.031	0.020
	(-0.61)	(0.32)
LN(WORKEXP)	-0.027	-0.103
	(-0.51)	(-1.52)
OVERCONFIDENCE	0.099	0.064
	(0.69)	(0.40)
MBA	-0.035	-0.196**
	(-0.50)	(-1.96)
LN(TOTALCOMP)	0.055	0.096
	(1.12)	(1.40)
DELTA	0.044	0.062
	(1.37)	(1.49)
VEGA	-0.080**	-0.096***
	(-2.15)	(-2.70)
CONSTANT	-4.196***	-4.623***
	(-2.93)	(-2.71)
Observations	5,810	5,810
Adjusted R-squared	0.632	0.673
Firm-year Controls	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes