IRS Attention and CEO Race[*]

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Abstract

A large literature has shown that race-related implicit biases affect our behaviors. However, there is a lack of research examining whether such biases affect financial regulators and enforcement agencies. We examine whether IRS attention, measured using IRS downloads of a company's annual reports from the SEC's Edgar database, is higher for firms led by a Black CEO. Using seven years of data for S&P 1500 firms, and controlling for relevant firm characteristics, we find significantly higher IRS attention for Black-CEO led firms. Examining tax behavior using multiple measures of tax aggressiveness, we find that Black-CEO led firms have similar or lower levels of tax aggressiveness than White-CEO led firms, suggesting that higher IRS attention is not warranted by underlying tax aggressiveness. Additional analyses show that higher IRS resources mitigate the race-related bias, consistent with greater reliance on implicit biases when under greater time pressure. As a placebo test, we examine IRS attention to Asian-CEO led firms versus White-CEO led firms. We find no higher attention for Asian-CEO led firms. We also replicate our main tests using an alternate measure of IRS monitoring, and find similar results. Finally, we examine ex post cash tax settlements, and find lower tax settlements for Black-CEO led firms. Overall, our results suggest that race-related biases affect IRS attention.

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

INTRODUCTION

A large and growing literature shows that unconscious thought processes and non-standard preferences, commonly referred to as behavioral biases, affect managers and directors. A nascent literature is beginning to examine the effects of such behavioral biases on regulators (Hanlon, Yeung, and Zuo, 2021). One of the behavioral biases which has become a large topic of discussion in society in recent years, particularly after the killing of George Floyd in May 2020, is implicit bias. Implicit biases include the unconscious stereotypes and preferences which can cause consciously non-racist, or even anti-racist, individuals to unknowingly treat people differently based on their race. Research in social psychology provides evidence that race-related implicit biases impact judgements in many areas, including in medicine, education, law enforcement, and criminal justice.[3] We link these two literatures, examining the potential impact of implicit bias on regulators.

In this study, we examine whether race-related implicit biases affect financial authorities overseeing firms. In particular, we examine whether the IRS pays higher attention to firms led by Black Chief Executive Officers (Black-CEO led firms) relative to firms led by White CEOs (White-CEO led firms). As we discuss in more detail in Section 2, there are several reasons to expect such implicit biases to affect the IRS given the processes which the IRS follows.

We focus on an IRS attention measure which primarily captures pre-audit attention – information search which is conducted when the IRS is in preliminary stages of deciding which

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[3] Foundational studies on implicit bias include Greenwald and Banaji (1995) and Greenwald, McGhee and Schwartz (1998). Hofmann, Gawronski, Gschwendner, Le and Shmitt (2005) examine the relationship between implicit and explicit biases and discuss reasons that implicit biases might diverge from explicit, conscious, ones. Pager and Shephard (2008) provide a review of the sociology research on racial discrimination in economic settings, including employment, housing, and credit markets. For a list of over 150 recent studies using the Harvard Implicit Association Test to measure implicit bias, see https://www.projectimplicit.net/resources/publications/, accessed August 2021.

firms to audit. While the IRS uses data analytics to guide audit decisions, a large human element is still involved during our sample period, and the pre-audit information search is an important component of this. We capture IRS attention using the number of times a firm's 10-k is downloaded from IP addresses affiliated with the IRS, as used in prior literature (Bozanic et al. 2017). The number of times 10-ks are downloaded represents acquisition of public information by the IRS. The IRS uses filed tax returns and information gathered from the public domain to decide whether and to what extent to audit a given firm (Mills and Sansing 2000; Beck, Davis, and Jung 2000; Mills, Robinson and Sansing 2010). Several tax attorneys and practitioners who have experience working at the IRS, in conversations with us, characterized this information acquisition as a basic research part of the pre-audit process. Thus the 10-k downloads primarily represent pre-audit scrutiny by the IRS.[4]

The IRS agents conducting pre-audit research on a company are likely to also be aware of the company's CEO, for multiple reasons. The IRS agents responsible for overseeing the firms in our sample are also responsible for verifying executives' personal tax returns. Such investigation is likely to reveal the identity, including images, of the CEO. IRS guides further encourage agents to use online information in examining firms, which is likely to reveal the identity and race of a CEO. Furthermore, a rational IRS agent may want to pay attention to the CEO, given that prior research has shown that CEOs influence firms' tax policies. Such an examination, though not motivated by race, may incidentally reveal race. Finally, outsiders to the IRS, such as the media and whistleblowers, may be influenced by race-related biases, which indirectly influence IRS agents. If the media covers a given CEO or firm more heavily, for example, it may draw more IRS attention to that firm. Section 2 provides additional details for each of these components. Overall, it is likely that an IRS agent will know the race of a CEO.

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[4] It is possible that some of the 10-ks downloaded also pertain to firms currently being audited, however practitioners suggest that the majority are likely to relate to pre-audit attention.

Discussions with industry practitioners with experience working with, or in, the IRS also confirms this inference.

A simple comparison is a typical financial market participant researching a firm – they are likely to learn who the CEO is, and see an image of the CEO, when doing their research. Few investors would restrict their research to text-only financial statements, for example. IRS agents are no different. While the text filings are a key source of their information, they do not base audit decisions solely on that information, and an important component of the pre-audit process is gathering additional, outside, information.

Knowledge of a CEO, and the CEO's race, will allow race-related implicit biases to unconsciously affect IRS agents' decisions of how much time to allocate to examining a firm. While the implicit bias might be small, the cumulative impact of implicit bias on decisions and actions can still be significant (Greenwald, Banaji, and Nosek 2015).

One reason to examine the IRS in particular is existing evidence of potential behavioral biases in IRS enforcement. A years-long Congressional investigation found that both right- and left-wing organizations were subjected to additional scrutiny and processing delays, due to the applicant organizations' political views being considered (Committee on Finance, 2015). Due to the timing and quantity of such requests, this visibly affected Tea Party applicants. More recently, evidence using inferred audits has indicated that there are more IRS audits focusing on tax filers in the Southern Black Belt, possibly related to usage of earned income tax credit claims (Bloomquist 2019, Mock 2019). While these attention-allocation decisions may not be motivated by conscious biases, they yield disproportionate effects to certain groups – e.g., Tea Party organizations in the former case, and lower-income Blacks in the latter. This is the type of effect we examine in this study. We do not attempt to investigate internal motivations, as this is impossible given the confidential nature of IRS monitoring. We examine whether the observable result – IRS attention – is higher for Black-CEO led firms. However, we also

conduct additional analyses which test specific predictions of implicit bias, to examine whether IRS attention differences are likely to be driven by race-related implicit biases.

The primary reason to expect no effect of implicit bias in the IRS setting is the use of quantitative factors to target monitoring and enforcement efforts. In particular, the IRS relies largely on firm size and other quantitative metrics to determine which firms to focus on (see, e.g., Bozanic, Hoopes, Thornock and Williams 2017; Nessa, Schwab, Stomberg and Towery 2020; and Transactional Records Access Clearing House, 2021). While there is still discretion in which firms IRS agents allocate more time and attention to, these quantitative metrics might mitigate the effects of any implicit biases.[5] Thus, it is not obvious that implicit biases will affect IRS attention, and it remains an empirical question as to whether such biases have a measurable impact.

To address the question of whether race-related implicit biases affect IRS attention, we first identify CEO race using CEO photographs. This method best matches the perceived race that an IRS agent is likely to observe. Research assistants categorize the race of each S&P 1500 CEO over the years 2008 through 2014 using the photographs. Thus we obtain a coding of whether the CEOs appear Black, and are likely to trigger Black-related implicit biases (e.g., Gligor, Novicevic, Feizabadi, and Stapleton, 2021; Gow, Larcker, and Watts 2021).

To ensure that we make maximal use of our sample, while limiting the extent to which differences between Black-led and White-led firms might affect results, we use entropy-balancing for our primary analyses (Hainmueller 2012). Entropy balancing has also been shown to be suitable for use in cases where the treatment sample is smaller relative to the

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[5] There may also be fluctuations over time in any bias-related effects because of changes in IRS practices. In the early 2000's, the IRS subjected almost all large firms to continuous audit. In such a setting, CEO race is extremely unlikely to play a role. Looking to the future, the IRS plans to use more data-analytic-driven selection methods. While such algorithms have been shown to reinforce biases in certain settings, they also remove, or at least limit, subjectivity. The period we examine is one in which not all large firms were audited (after the continuous-audit regime had ended) but prior to the start of sophisticated data-analytic methods for audit selection.

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.[6] Results are also robust using propensity score matching.

Our main results indicate that, controlling for a wide set of firm characteristics which might draw IRS attention, having a Black CEO is associated with 37 – 40 percent higher IRS attention. While this higher attention is consistent with race-related implicit bias affecting IRS attention, the primary alternative explanation is that the differential attention is justified by more aggressive tax planning by Black-CEO led firms. We control for tax aggressiveness in our main analyses using the firm's GAAP-based effective tax rate and tax-related contingent liabilities reported as unrecognized tax benefits. Furthermore, we conduct additional tests to more directly address this alternative explanation. We consistently find no significant difference, or find lower tax aggressiveness for Black-CEO led firms compared to White-CEO led firms, using multiple tax aggressiveness measures. Thus, the differential attention is not driven by differential tax aggressiveness.

To better understand the attentional bias, we conduct several additional analyses. First, we conduct a placebo test using Asian CEOs. If higher IRS attention is due to unobservable firm characteristics which also drive the appointment of minority CEOs, then we should find similar results for Asian CEOs as Black CEOs. On the other hand, implicit biases differ towards Asian-Americans. Asian-Americans are often described as a "model minority." While there can still be anti-Asian sentiment in the United States, as evidenced by a surge in anti-Asian hate crimes during the Covid-19 epidemic, the types of biases differ for Asian versus Black

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[6] The opposite case of having a small control sample relative to large treatment sample causes extreme weights to be assigned to a handful of control observations. McMullin and Schonberger (2021) recommend flipping the control and treatment sample to overcome this issue, supporting having a smaller treatment sample. The number of treated observations used in entropy-balanced tests in Shroff, Verdi, and Yost (2017) is 70 relative to 5,120 control observations, while the number of treated observations in our main tests is 56 relative to 9,775 control observations.

Americans. In the criminal justice system, for example, outcomes for Asian defendants are similar to those of White defendants, both of which differ significantly from Black defendants (e.g., Johnson and Betsinger 2009; Kutateladze, Andiloro, Johnson, and Spohn 2014; and Saperstein, Penner, and Kizer 2014). Consistent with race-related biases, we find that IRS attention towards Asian-CEO led firms and White-CEO led firms is indistinguishable. This suggests that minority-hiring related factors are not driving our results.

Second, we examine cross-sectional variation with respect to IRS resources as the influence of implicit biases on decisions is likely to be highest when individuals make decisions under time pressure and stress, i.e. when IRS resources are low (Chugh 2004; and Bertrand, Chugh and Mullainathan 2005). Nessa, Schwab, Stomberg and Towery (2020) show that IRS audit decisions vary significantly with respect to IRS resources. 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-resources years, suggesting the operation of implicit biases.

Third, we employ an alternate measure for IRS monitoring based upon the expiration of unrecognized tax benefits (UTBs), and find similar results. This result implies that the IRS is allowing unrecognized tax benefits (UTBs) to expire at a higher rate for White-CEO led firms than for Black CEO-led firms, without active monitoring from the IRS. Thus, the IRS is not only paying more attention to Black-CEO led firms' 10-k filings on Edgar, but is also monitoring their unrecognized tax benefits more heavily.

Fourth, we examine whether ex-post cash settlements with the IRS, measured using UTB settlements (Fox and Wilson 2020; Robinson, Stomberg, and Towery 2015), differ for Black-CEO and White-CEO led firms. If we find higher cash settlements for Black-CEO led firms, it suggests that higher monitoring may be a rational method for revenue collection, even if it is not justified by other indicators of tax aggressiveness. Instead, we find significantly

lower cash settlements for Black-CEO led firms, similar to stop-and-searches of Black drivers yielding fewer contraband discoveries. These results indicate that the IRS may be (unconsciously) using a "lower bar" when deciding to allocate enforcement resources towards Black-CEO led firms.

Our study faces two primary limitations. First, there is a small number of Black CEOs in our sample due to the overall low numbers of Black CEOs among S&P 1500 firms.[7] We utilize econometric techniques to best utilize this small sample of Black CEOs, but it is an unavoidable constraint of the research. Second, we cannot speak to the thinking of IRS agents. We control for a large number of firm-related variables, conduct a placebo test to rule out unspecified factors related to minority CEOs, examine implicit-bias-relevant cross-sectional variation with respect to IRS resources, and examine measurable tax aggressiveness and subsequent tax settlements. However, we cannot see inside the minds of IRS agents.

Our results are of importance despite these limitations. Our results at least 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 implicit biases on regulatory bodies more generally is warranted.

Our study contributes to four streams of literature. Our paper provides the first evidence that CEO race affects financial oversight and enforcement.[8] This is important given that the IRS and other government agencies are tasked with enforcing financial regulations impartially

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[7] 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).

[8] It is potentially important to examine the behavior of all financial regulators, including regulators such as the SEC, IRS, and the PCAOB. We begin by examining the IRS in this study as they have been prone to behavioral biases in the past, as evidenced by the extra scrutiny and processing delays for tax exempt status by left- and right-wing organizations (Committee on Finance, 2015). In addition, we are able to build off of a large literature which establishes a range of measures for firms' tax aggressiveness and multiple measures of IRS attention and monitoring.

and fairly, consistent with protecting civil rights.[9] While the impacts of race-related biases in finance and accounting are of increasing interest to the public (e.g., O'Neal and Versprille, 2020) and regulators (e.g., Garcia, Draeger, and Greff, 2021), academic literature examining these effects is still young. We contribute to this growing literature (e.g., Dougal et al. 2019; Fairlie, Robb, and Robinson 2020; Field, Souther, and Yore 2020). Furthermore, as the 2015 Congressional Report on IRS processing shows, internal operating policies, practices, and culture can all have a significant impact on institutional bias. Many of these factors can be addressed (Committee on Finance, 2015). A better understanding of race-related biases can lead to appropriate actions to address them. Thus, our study is of practical importance to firms, investors, the IRS, and government regulators.

Second, we contribute to the literature examining race-related biases in legal enforcement, including stop and search and violent crime. Research has examined such biases in the context of the criminal justice system (e.g., Eberhardt, Davies, Purdie-Vaughns and Johnson 2006; Eberhardt 2019; and Pierson, et al. 2020), but to our knowledge ours is the first study to examine such biases with a focus on financial regulators.

Third, we contribute to the developing literature on IRS attention. Bozanic, Hoopes, Thornock and Williams (2017) develop a novel measure for IRS attention. They find that IRS attention increases following the addition of the tax-relevant Fin 48 disclosures, but decreases following the addition of similar tax filing information (schedule UTP). Fox and Wilson (2020) find that the IRS increases attention around firm restatements, particularly around press releases or media coverage of such restatements. While these papers document rational determinants of IRS attention, our paper provides evidence that biases also affect IRS attention.

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[9] See, e.g., https://www.irs.gov/about-irs/protecting-taxpayer-civil-rights describing zero tolerance policies of the IRS towards discrimination.

In a concurrent working paper, Brown, Paparcuri, and Paparcuri (2021) also examine biases - studying whether the IRS pays more attention to firms in "Sin Stock" industries.

Fourth, we contribute to the growing literature on biases in the allocation of limited enforcement resources. Several studies provide evidence that political and employment connections impact enforcement (see, e.g., Correia 2014; Heese 2019; Heese, Khan and Ramanna 2017; and deHaan, Kedia, Koh and Rajgopal 2015).[10] Stice-Lawrence (2021) finds evidence that simple heuristics affect the allocation of SEC employees' attention; SEC employees are more likely to monitor firms with names starting with letters earlier in the alphabet. Our study contributes to this literature by documenting the impact of a specific bias, race-related implicit bias, on the allocation of IRS attention. While potential IRS bias has been a topic of popular press coverage, there is little research in this area. Lin, Mills, Zhang, and Li (2018) provide evidence of an impact of political connections on tax enforcement effectiveness in China. Other studies examine the effect of firm or industry political contributions on tax law (e.g., Minnick and Noga 2017; Chen, Dyreng, and Li 2018).

The remainder of our paper is structured as follows. Section 2 discusses related literature and develops the main hypothesis around race-related attentional bias. Section 3 describes the data, sample, and univariate evidence. Section 4 discusses research design, presents analyses, and reports results. Section 5 concludes.

HYPOTHESIS DEVELOPMENT

Below we discuss relevant research and institutional details, and develop our primary hypothesis. We discuss implicit bias in general, and how it might apply to individuals looking

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[10] Correia (2014) and Heese (2019) provide evidence that political pressures impact SEC enforcement efforts, while Heese, Khan and Ramanna (2017) explore the political-connection – enforcement relationship in more detail. DeHaan, Kedia, Koh and Rajgopal (2015) find some evidence of "rent seeking" behaviors by SEC lawyers who later move to the private sector.

at a firm or CEO, as well as relevant details of the IRS process and how implicit biases might affect the IRS.

2.1. Implicit Bias

Implicit biases cover many characteristics, including gender, age, weight, race, disability, and more. Greenwald and Krieger (2006) discuss the theory and science behind implicit bias research in general. In this section, we focus on empirical evidence on race-related implicit biases. In a relevant example of research on race-related implicit bias, Pierson et al (2020), study nearly 100 million traffic stops, and exploit a discontinuity which occurs around sunset. Focusing on the time period just around sunset, they found that Black drivers were less likely to be stopped after sunset, when, as they put it "a 'veil of darkness' masks one's race," compared to before sunset when skin color is more visible. A vast body of research on traffic stops has shown a higher tendency to stop Black drivers, to conduct searches of Black drivers conditional on stops, and has shown that the bar appears lower for them – such searches result in discoveries of contraband less often. Such patterns appear to be a manifestation of implicit biases, unconscious biases which affect our judgement and behavior when interacting with others.

Eberhardt (2019) synthesizes a large body of research on race-related attentional bias, in which individuals pay more attention to Black individuals when they are thinking about, or have recently thought about, crime. As she discusses, 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.

Research has also shown that individuals in a wide range of professional settings are subject to race-related attentional biases, and that such biases affect their work. One of the most famous sources of bias data is the Harvard Implicit Association Test, which focuses on the

measurement of implicit biases (see https://www.projectimplicit.net/ for more information about Project Implicit). Project Implicit lists over 150 studies published using data from the implicit association tests, showing race-related biases impacting work-related decisions of professionals such as teachers, attorneys, health care providers, and scientists.[11,12]

Additionally, implicit biases can affect in-group as well as out-group members. For example, Voigt et al. (2017) find that police officers on average speak to Black individuals with significantly less respect than white individuals, regardless of officer race. As such, the racial diversity of the group in question, i.e., the IRS, does not determine whether they may or may not be influenced by race-related implicit biases.

However, as Greenwald and Krieger (2006) write, despite the large literature on implicit bias, it can still be difficult to predict precisely what form such biases will take, and how they will impact behavior. In particular, biases against Blacks may not extend to white-collar types of behavior such as tax avoidance. 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." While tax aggressiveness covers a spectrum, and not all is "crime," stereotypes of white-collar criminals as White males might extend to the spectrum of tax aggressiveness.

2.2. IRS Knowledge of CEO Race, and the IRS 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. The IRS agents in the LB&I division are responsible for "verifying that key officers and executives have filed

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[11] https://www.projectimplicit.net/resources/publications/, accessed August 2021.
[12] While much of the existing work in this area focuses on racial biases in the United States of America (US), this issue is not limited to the US. For example, Vomfell and Stewart (2021) find racial biases in patrolling, stops, and searches, in the United Kingdom.

their income tax returns simultaneously with the examinations of LB&I corporate tax returns" (IRM, 1.1.24). In order to do this check, IRS officials need to identify the relevant executives and information related to their compensation. IRS audit guides recommend that agents use form Def 14A, a proxy statement filed with the SEC, to obtain this information. The proxy statement provides executives' identities and compensation, typically including pictures of the executives, thus revealing the race of the executive.[13] In a concurrent working paper, Gow, Larcker, and Watts (2021) use the pictures in Def 14A filings to identify executives' race, demonstrating how these forms, which IRS agents are guided to use, lead to identification of CEO race. Thus the IRS agents handling a firm's tax returns are likely to become aware of the identity and race of the executives of the firm, if they are following standard procedures.[14]

Even if the proxy statements of some firms do not contain pictures of executives, IRS agents may view this information online. Certain IRS audit guides for large corporations mention using Internet searches to gather information (IRS 2017). Even a cursory Internet search for a CEO would likely reveal the CEO's race though images. Along with examining 10-k filings from the Edgar website, an agent conducting pre-audit research might include a search for information about key executives.

Finally, prior literature has shown that CEOs have a significant effect on the tax policies of their firms (e.g., Dyreng, Hanlon and Maydew 2010; Chyz 2013).[15] Thus, a fully rational IRS

[13] See for example the Def 14 A proxy statement of Amazon -
https://www.sec.gov/Archives/edgar/data/1018724/000119312520108422/d897711ddef14a.htm
[14] In addition to use for verifying key officer and executive filings, Def 14A is used for several other aspects of pre-audit analysis. For example, the guide for auditing Golden Parachute payments specifically lists using SEC filings, in particular the Def 14A proxy statements (with a link to the SEC Edgar webpage), company webpages, and Google searches (IRS 2017). Similar emphasis on usage of proxy statements is provided in other audit guides such as for equity(stock)-based compensation and nonqualified deferred compensation (IRS 2015b, IRS 2021).
[15] Dyreng, Hanlon and Maydew (2010) show that CEOs have a significant effect on the tax policies of their firms, but do not find specific CEO characteristics that predict what effect a CEO will have. They explain that CEOs can affect tax decisions through "tone at the top," hiring decisions, and setting incentive/pay structures, even if they are not involved in specific tax-related decisions. Subsequent research has documented several personal characteristics of CEOs and other executives which are associated with the tax aggressiveness of their firms, after controlling for other firm factors. In particular, executives who are personally tax aggressive are more likely to induce their firms to use tax shelters (Chyz 2013); CEO's political preferences affect both effective tax rates

agent might gather information about a firm's CEO in the pre-audit phase, when deciding whether a firm warrants additional attention. Even if the intention is to identify clearly tax-relevant information, an IRS agent is likely to incidentally identify the CEO's race when conducting this type of background information search. Any online search for a high-profile individual quickly reveals photos of that individual.

We also discussed the question of IRS knowledge of CEO race with industry practitioners with experience either in, or working closely with, the IRS. 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 obvious (e.g., when visibly identifiable or when a topic of media coverage).

Overall, there is a high likelihood that the IRS agents conducting pre-audit analysis of a firm are aware of the firm's CEO and the CEO's race. This opens the possibility that the IRS agent's implicit biases about race will impact the level of attention they place on the firm – e.g., conducting a few more searches on one firm than another, without even realizing it. On the other hand, objective, quantitative, factors can often be used to target monitoring and enforcement efforts in financial settings. In particular, the IRS relies largely on firm size to determine audit targets (see data from Transactional Records Access Clearing House, 2021). Nessa, Schwab, Stomberg and Towery (2020), using confidential IRS audit data, and Bozanic, Hoopes, Thornock and Williams (2017), using IRS attention data, find that several quantitative metrics determine which firms the IRS focuses on. Thus, implicit biases might not play a significant role in IRS attention.

(Christensen, Dhaliwal, Boivie, and Graffin, 2015) and tax shelter use (Francis, Hasan, Sun, and Wu 2016); both CEO narcissism (Olsen and Stekelberg 2016) and CEO overconfidence (Chyz, Gaertner, Kausar, and Watson 2019) are associated with higher tax shelter use; and CEO military experience is associated with lower tax aggressiveness (Law and Mills 2017).

2.3 Indirect Implicit-Bias Spillovers

In addition to IRS agents knowing about, and being influenced by, the CEO's identity, the IRS can be indirectly affected by individuals outside of the IRS who are subject to implicit biases. The Tax Relief and Health Care Act of 2006 enhanced the IRS whistleblower program, encouraging individuals to provide tips on possible tax non-compliance to the IRS by paying increased awards to those who provide information leading to collections. This particularly encourages tips on high-income individuals and corporations (IRS, 2015a). Tip providers are often associated with the firm in some way, giving them knowledge of the firm's tax practices. These individuals are also likely to know who the CEO is, and as a result to know the CEO's race. If potential whistleblowers are more likely to provide a tip for Black-CEO led firms than White-CEO led firms, that could lead to higher IRS attention towards Black-CEO led firms, as the IRS investigates the tips they receive.

Bergemann and Wright (2021) 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, based on race. As of 2018, Whites made up 77% of the American labor force, while Blacks made up only 13% (BLS, 2019).

Similarly, if media coverage of CEOs is affected by race, as it is by gender (Smith, Chown, and Gaughan 2021), such coverage might lead to a bias in IRS attention, to the extent that IRS attention is drawn by media coverage (Fox and Wilson 2020). 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.

If IRS agents are unable to explicitly adjust for the implicit biases of others, they will be indirectly influenced. Higher whistleblowing or press coverage for Black-CEO led firms will lead to higher IRS attention towards these firms.

2.4 Existing Evidence

As discussed in the introduction, anecdotal evidence on political groups from 2010-2013 and tax filers in the Southern Black Belt in the late 20-teens supports the proposition that biases might impact how IRS agents allocate their limited enforcement resources (Committee On Finance, 2015, Bloomquist 2019, Mock 2019). A series of investigative reports by ProPublica journalists similarly showed high audit levels for poor Americans, with audit rates dropping over the last decade for the top 1% of income-earners (Kiel and Eisinger, 2018; Kiel 2019). The reports prompted Congressional attention and an IRS response. However, the IRS explained, allocating limited resources to generate more revenue led to the outcome – it was simply far more expensive to audit higher-income Americans and corporations (Rettig, 2019). Together, these examples show that, even if unintentional, IRS attention can disproportionately impact certain groups.

Evidence from academic research also indicates the potential impact of biases on regulatory attention. Lin, Mills, Zhang, and Li (2018) provide evidence of an impact of firms' political connections on the effectiveness of regional tax enforcement to affect firm tax policy in China, suggesting that firms view political connections as protective against tax enforcement. Focusing on SEC attention, Stice-Lawrence (2021) finds evidence that simple heuristics affect the allocation of SEC employees' attention. In particular, SEC employees are more likely to monitor firms with names starting with letters earlier in the alphabet. Thus, it is plausible that IRS agents will be affected by implicit biases, leading to higher attention for Black-CEO led firms.

2.5 Primary Hypothesis

In summary, two elements lead to our hypothesis. First, prior research suggests that implicit biases are likely to lead to more negative judgements towards Blacks in economic and business settings. Second, IRS agents and whistleblowers are likely to know of a CEO's race, and there is potentially enough subjectivity in the pre-audit attention paid to firms, such that implicit biases might influence IRS time/attention allocation. Overall, it is plausible, but not obvious, that race-related implicit biases will affect IRS attention. Thus, we state our main hypothesis in the null form, as follows.

H1. IRS Attention is no different for Black-CEO led firms than for White-CEO led firms.

To improve our understanding of any differential IRS attention for Black-CEO led firms, we conduct several additional analyses. For example, we examine Asian CEOs as a falsification test, given research that the first element – the implicit biases – differ for Asians in the United States than for Blacks. We also examine cross-sectional variation with respect to IRS resources given research that the second element – the impact of implicit biases on decisions – is stronger when the decision-maker is in a more stressed and constrained setting. We discuss the motivations and specific predictions for all additional tests in Section 4, when presenting these analyses.

DATA, MEASURES, AND UNIVARIATE EVIDENCE

Our sample is made up of S&P 1500 firms with sufficient data over the period 2008 through 2014 as our main variable of interest is *IRS Attention*, is available only until 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, before requiring tax control variables, consists of 12,058 firm-year observations, of which 81 have a Black CEO, mapping

to 25 Black CEOs. The more restricted sample for which we have tax control variables defined consists of 9,831 firm-years, of which there are 56 Black-CEO led firm-year observations. This corresponds to 20 Black CEOs in the final sample.

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

In order to determine CEO race, we first obtain CEO photographs online.[16] A simple Google search for the CEO name is conducted. 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.

The approach of coding race based upon photographs focuses our race classification on how the CEO is perceived by external observers, rather than their self-identified race, as in prior research (Cook and Glass 2014; Gligor et al. 2021; Gow, Larcker, and Watts 2020). This distinction is important for our purposes: IRS agents examining a firm 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 attentional biases (Eberhardt et al. 2006).

In the cases that the first 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

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[16] 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 2020 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.

publicly available information. In the handful of cases for which the CEO's race is still unclear, the race is coded as "Unsure," and the CEO is not included in either the White or Black CEO samples.[17] We verified that all the CEOs identified as Black were indeed classified correctly.

3.2 IRS Attention

We define *IRS Attention* following Bozanic et al., 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.[18] 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, 2020; Brown, Paparcuri, and Paparcuri, 2021; Finley and Stekelberg, 2020).

As an additional analysis, we utilize an alternate measure of IRS enforcement activity, *Tax Monitor,* based on UTB expirations (Finley and Stekelberg, 2020). We define this variable in more detail in Section 4.3.

3.3 Summary Statistics and Univariate Evidence

Table 2, panel A presents summary statistics for the main sample, for which tax 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 was 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 noted

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[17] We randomly audited a sample of CEOs coded in each race category by the research assistants at various stages in the data coding process, to ensure accuracy and consistency.
[18] We thank the authors for making the IRS downloads data available.

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 1 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.

RESEARCH DESIGN AND EMPIRICAL RESULTS

4.1 IRS Attention for Black-CEO Led Firms

Our primary research question is whether the IRS pays higher attention to Black-CEO led firms. Univariate evidence presented in Section 3 suggests that they do. In this section, we

examine whether this is still true once we control for a variety of firm-related variables which might drive IRS attention. We examine the attention paid by the IRS to Black-CEO led firms using the following entropy-balanced regression model:

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

(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 fiscal year, and zero if the firm was led by a White CEO. Consistent with the criminology literature cited in Sections 1 and 2, we focus on Black CEOs as the treatment sample relative to White CEOs as the control sample, given clear criminality-related biases for these groups. We use entropy balancing to achieve covariate balance between the treatment and control samples (Hainmueller 2012). Using our sample of 56 Black-CEO observations, we use entropy balancing to reweight the 9,775 White-CEO led control observations to obtain comparable distributions of the moments of matching variables. We use all the firm- (*Size, MB, MNE, Cash, Inventory, Leverage, R&D,* and *ROA*) and tax-related control variables (*GAAP ETR* and UTB) as matching variables. Appendix B provides additional details.

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). This is particularly relevant for our sample, as it allows for retention of the full sample instead of dropping control-sample observations. The use of entropy balancing in cases of a smaller treatment sample relative to control sample is well accepted. For instance, Shroff, Verdi, and Yost (2017) use entropy balancing to compare 70 private bonds (treated sample) against 5,120 public bonds (control sample), to examine when peer information environment matters.

Similarly, Boland and Godsell (2020) test political cost hypothesis using an entropy balanced sample consisting of 582 treated firms and 16,167 control firms.[19]

We control for a wide set of firm- and tax-related variables that may drive *IRS Attention*. In particular, 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*) as they are known determinants of IRS audit probability (Gallemore and Jacob 2020; Hoopes, Mescall, and Pittman 2012; Nessa et al. 2019). We control for growth prospects using market to book ratio (*MB*) as growing firms might be more tax-aggressive (Chen et al. 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). Hence, we control for all these factors in our regression model. We also control for two measure of tax avoidance – *GAAP ETR* and Unrecognized tax benefits (*UTB*) – which could increase tax authority's interest in the firm (Bozanic et al. 2017). We include year fixed effects to control for time trends, such as the effects of Schedule UTP on IRS attention. We also include industry fixed effects to account

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[19] As a robustness test, we estimate Equation 1 using a propensity score matching method. We match each Black-CEO led firm-year with the three nearest neighbors from the sample of White-CEO firms. We choose one-to-many matching to get closer to entropy balancing in which continuous weights are assigned to the control sample. We choose to 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.

for industry-level variation in IRS attention.[20,21] 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*).

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. We investigate whether the increased attention to Black-CEO led firms is driven by differential behavior in tax aggressiveness. To understand whether there are any systematic differences in tax-

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[20] Due to underrepresentation of Black CEOs in the S&P 1500 sample, we do not have a 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. We report statistics for CEO changes in Section 4.3.5.

[21] 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 2017). While this reduces the sample, results remain robust. The coefficients on *Black* remain positive and statistically significant at the 5% 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.

aggressiveness behavior of CEOs of different races, we estimate the following model using the

same entropy balancing as in Section 4.1:

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

$$(2)$$

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. While our

interest is in tax aggressiveness, we utilize several measures along the tax avoidance spectrum.

In particular, 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

et al. 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 2017). 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).

We include the same set of firm characteristics included in Equation (1) as these variables are known determinants of tax avoidance behavior. 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 Additional Analyses

In this section, we present the results of several additional analyses. First, we examine Asian-CEO led firms as a falsification test of whether the results are driven by minority-hiring related factors or by crime-related attentional biases, which likely differ for Asian versus Black CEOs. Second, we examine whether IRS resources impact the incremental attention paid to Black-CEO led firms. If our results are due to implicit biases affecting IRS agents' decisions, we

expect stronger effects when resources are more constrained. Third, we examine an alternate measure of IRS resources allocation, *Tax Monitor*, which captures monitoring of firms' disclosed UTB positions. Fourth, we examine whether the IRS obtains incremental cash tax settlements from Black-CEO led firms. This sheds light onto whether IRS attention is potentially driven by revenue motives, or, conversely, whether the IRS holds Black-CEO led firms to a higher standard when deciding whether to inspect them. Finally, we examine changes in IRS attention around CEO changes.

4.3.1 Placebo Test: Asian-CEO Led Firms

One possible alternative explanation for our findings is that Black-CEO led firms are different from White-CEO led firms due to unobservable differences in firm characteristics that are correlated with hiring of minority 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. 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 5. Using a sample of 351 Asian-CEO firm-years and 9,775 White-CEO firm-years, we find no difference in IRS attention between Asian-CEO led firms and White-CEO led firms. This 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. Column (1) includes firm-level controls, column (2) includes firm-level controls and controls for tax behavior, while column (3) introduces industry fixed effects. Year fixed effects are present in all three columns. In all cases, coefficient estimates for *Asian* are small and insignificant.

4.3.2 IRS Resources

IRS audit decisions vary significantly with IRS resources (Nessa, Schwab, Stomberg and Towery (2020). The impact of race-related biases on decision-making tends to peak when resources such as time are constrained and when stress is high (Chugh 2004; Bertrand, Chugh, and Mullainathan 2005). Thus, when the IRS has more resources to allocate towards examining corporate tax filings, the effect of these 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). 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)*.[22]

Table 6 reports results of variation of racial bias with 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

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[22] *I(IRSRES)* is subsumed by year fixed effects.

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 suggest one method of mitigating race-related attentional biases in enforcement activity – giving decision makers the time and resources to make more considered decisions.

4.3.3 IRS Monitoring

In this section, we employ an alternate measure for IRS activity, IRS monitoring, based upon the expiration of uncertain tax benefits (UTBs), developed and validated by Finley and Stekelberg (2021). The measure is based on the expiration of firms' tax-related contingent liabilities - UTBs. Firms provide detailed data on changes in UTBs, explaining whether reductions are due to settlements with the IRS, determinations that the tax benefit 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. 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 accrue. 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*. Results are presented in Table 7. We find significantly higher IRS monitoring for

Black-CEO led firms relative to White-CEO led firms. In terms of economic magnitudes, this 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.

4.3.4 UTB Tax Settlements

To examine whether the increased level of IRS attention 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 2020; 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. This 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. Table 8 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. This is in contrast to prior literature: Fox and Wilson (2020) find that higher IRS attention related to restatements is associated with *increased* settlements, while Brown, Paparcuri, and Paparcuri (2021) find *no difference* in the settlement amounts of "sin" firms with IRS higher attention compared to "non-

sin" firms. 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.

4.3.5 Changes in IRS Attention around CEO Changes

Due to the low number of Black CEO's for S&P 1500 firms, we have a small number of CEO changes involving a switch in CEO race. However, in untabulated tests, we examine IRS attention around CEO changes. From the main sample, we retain firms that had at least one CEO change in our sample period. Further, we require data availability for at least one year prior and one year after the CEO change for all the control variables in Equation (1). We examine changes in IRS attention around the CEO change, after controlling for other determinants of IRS attention, as in Equation (1). We also control for firm fixed effects in this specification as we are interested in within-firm changes in IRS attention after CEO-change. Based on the coefficients of this fully specified regression,[23] we find that after a change from a White CEO to a new White CEO, IRS attention increases by 4.4% in the three years post-change. Subsequent to a White-CEO to Black-CEO change, IRS attention increases by 30%,[24] which is approximately 6 times larger in magnitude compared to the White- to White-CEO change. These results are reported in graphical form in Figure 2. While these are economically significant results, they are not statistically significant, possibly due to the low number of CEO changes—only seven for Black CEOs.

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[23] We modify Equation (1) to include the following independent variables apart from the controls: *WhiteCEO*, *BlackCEO*, *Post*, *BlackCEO * Post*. We suppress the constant to be able to capture the effects of both White- and Black-CEOs in the pre-period.

[24] The change in the regression coefficient for White- to Black-CEO led firms from 0.978 in the pre-period to 1.2428 in the post-period is equal to an increase of 0.2648. Since the dependent variable-*IRSAttention* is a logged measure, this corresponds to a 30% increase in IRS attention.

CONCLUSION

Our study examines whether a CEO's race affects IRS attention. We find race-related biases in IRS attention to SEC filings and IRS monitoring of UTB positions. In particular, the IRS pays higher attention to Black-CEO led firms than to White-CEO led firms, consistent with race-related implicit biases in other aspects of society. This higher attention does not appear to be driven by differential tax aggressiveness. We find that Black-CEO led firms have similar or lower tax aggressiveness to White-CEO led firms using a variety of measures. Further, ex-post cash tax settlements for UTBs are lower for Black-CEO led firms, suggesting that the IRS uses a lower bar when deciding to allocate limited enforcement resources to Black-CEO led firms. We do not find any similar bias related to Asian-CEO led firms, consistent with research showing differential expectations of behavior for Asians (more similar to perceptions of Whites) versus Blacks. Finally, we find that the race-related attentional bias towards Black CEOs is attenuated when IRS resources are higher, consistent with expectations for the impact of implicit biases on decision-making.

Overall, our results provide evidence of a race-related implicit bias affecting IRS attention, and thus their enforcement activities. While there has been an increased focus on anti-Black racism in the wake of the death of George Floyd in May 2020, there is still much to learn, particularly regarding the effects of race-related biases on financial monitoring, regulation, and enforcement. Information regarding these biases is important both for enforcement agencies themselves, in bringing to light patterns worth examining internally, and for Black-led firms and for external stakeholders, including the broader society, who should be aware of biases in monitoring and enforcement.

While our study focuses on IRS attention and monitoring, other financial market participants involved in oversight are likely to be subject to similar biases. It remains for future research to examine whether race-related biases impact other agencies and financial market participants

which monitor firms and help to enforce financial regulation and standards. It is also an open question whether data analytics will help to mitigate the impacts of such biases, or, conversely, act to codify biases. There will be many questions regarding how best to design and use data analytics going forward.

Our results are also relevant to understanding and addressing the lack of minority CEOs. If there are biases in how these CEOs are treated, that serves as an additional impediment to their appointment and success. Understanding and addressing how our race-related biases affect financial markets, including financial regulators and oversight, is important to addressing these inefficiencies. It is important to note that our results should not be viewed as a reason to avoid Black CEOs. Despite higher IRS attention on Black-CEO led firms, these firms do not pay higher taxes as measured by effective tax rates, nor do they face higher cash settlements with the IRS, as measured by UTB settlements.

It is also important to note that our results do not imply that bias at the IRS is inevitable. The bias in attention decreases with higher IRS resources. Moreover, we find lower tax settlements of UTB positions, suggesting that biases in the earlier stages of the IRS process – e.g., pre-audit attention and IRS monitoring – do not translate into higher settlements. Better understanding the biases at play, and how current processes allow for such biases to impact regulators, will allow regulators to make changes to mitigate such effects.

Overall, our results provide evidence that implicit biases can have a significant impact on the allocation of scarce attentional resources, 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 much broader investigation and discussion of regulatory and enforcement biases in finance and accounting.

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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 (2021).

TAX SETTLE
Sum of UTB settlements from years t to t+3 scaled by UTB in the year t.

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
Year-end unrecognized tax benefits (UTBs) (TXTUBEND) scaled by total assets (AT).

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

GAAPETR	Total tax expense (TXT) divided by pretax book income (PI). and winsorized at 0 and 1. We require pre-tax income (PI) to be positive. Following Bozanic et al. (2017), *GAAPETR* is the within-sample quintile rank of *GAAPETR*.
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.

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.

APPENDIX B – DETAILS OF ENTROPY BALANCING

We use entropy balancing to achieve covariate balance between Black-CEO led firms and White-CEO led firms (Hainmueller 2012). We balance the two samples on the variables listed below. Shown below are the summary statistics before and after entropy balancing.

Variables	BLACK-CEO FIRMS		WHITE-CEO FIRMS (BEFORE BALANCING)		WHITE-CEO FIRMS (AFTER BALANCING)	
	N	Mean	N	Mean	N	Mean
SIZE	56	8.732	9,775	7.906	9,775	8.731
MB	56	2.481	9,775	2.852	9,775	2.481
MNE	56	0.607	9,775	0.568	9,775	0.607
CASH	56	0.099	9,775	0.124	9,775	0.099
INVENTORY	56	0.048	9,775	0.100	9,775	0.048
LEVERAGE	56	0.217	9,775	0.215	9,775	0.217
R&D	56	0.035	9,775	0.027	9,775	0.035
ROA	56	0.089	9,775	0.092	9,775	0.089
GAAPETR	56	2.786	9,775	3.001	9,775	2.786
UTB	56	3.536	9,775	2.886	9,775	3.535

Entropy balancing is done on a yearly basis, i.e. a Black-CEO led firm in 2008 is balanced with other White-CEO led firms in year 2008, then the same process is repeated for each year of our sample. The reason for having a rolling-window balancing is because of CEO changes; a Black-CEO could move from one firm to another, as result the firm's characteristics also change necessitating fresh balancing.

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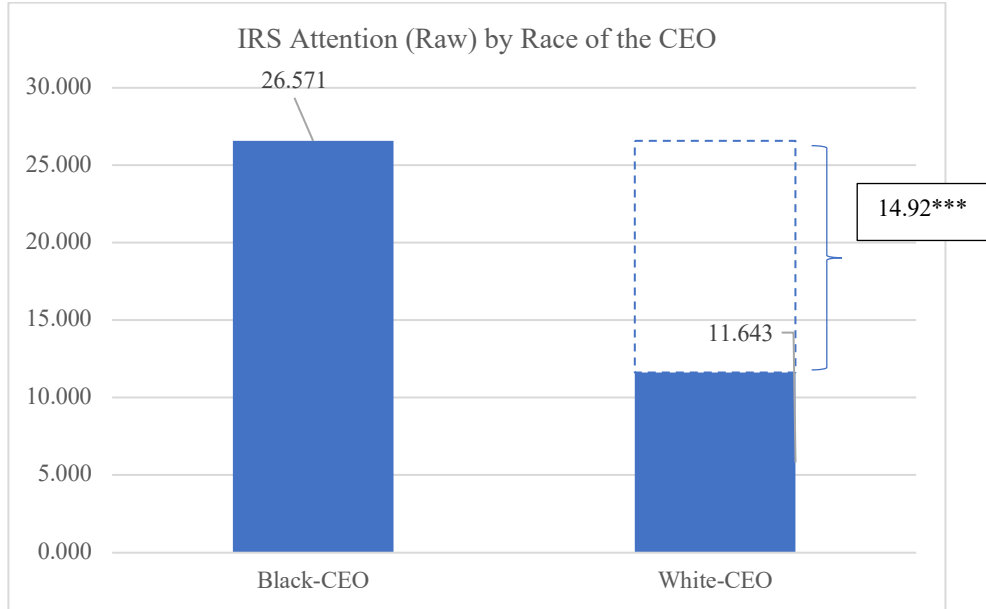
This figure depicts the attention paid by IRS to Black-CEO led firms and White-CEO led firms. IRS Attention (Raw) is the number of 10-Ks downloaded during a firm's fiscal year by IRS-affiliated IP addresses. The X-axis provides the race of the CEO, while the Y-axis measures the number of 10-K downloads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

Figure 2 – IRS Attention around CEO Changes
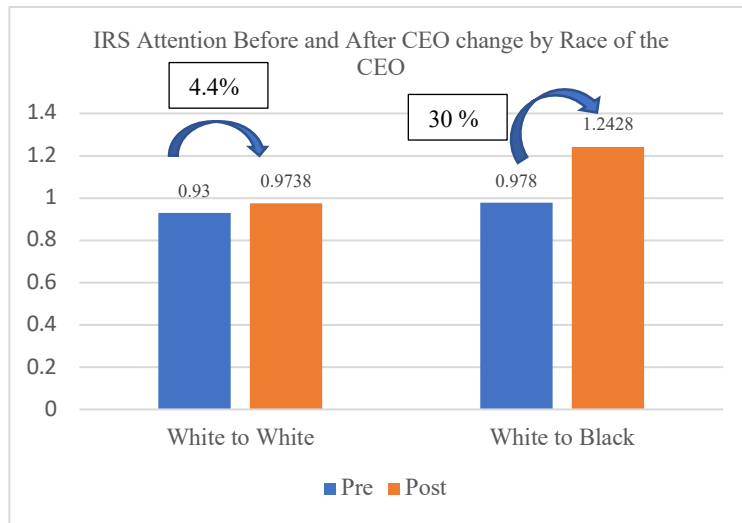
This figure depicts the attention paid by IRS around CEO changes. The vertical axis corresponds to the value of the regression coefficient of the particular sub-group in the pre- and post-periods. Footnote 21 provides details of the regression specification. The Blue bars correspond to the pre-period values, while the Orange bars correspond to the post-period values. 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.

Table 1
Sample Selection

	Firm-year observations	Black CEO firm-year observations
2008-2014 S&P1500	14,201	92
Drop CEOs with ambiguous race information	(33)	92
Retain only Black and White CEOs	(746)	92
Drop missing IRS attention data	(465)	86
Drop missing firm control variables	(899)	81
Drop missing tax aggressiveness control variables	(2,227)	56
Total	**9,831**	**56**

Table 2
Summary Statistics

PANEL A: FULL SAMPLE

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

PANEL B:	BLACK-CEO LED FIRMS		WHITE-CEO LED FIRMS			
Variables	**N**	**Mean**	**N**	**Mean**	**Diff.**	**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	*

This table presents descriptive statistics (pre-entropy balancing) for the main variables used in our analyses. Variable definitions are provided in Appendix A. Panel A reports statistics for the full sample. Panel B reports statistics for Black-CEO and White-CEO-led firm-years separately. 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.

Table 3 - IRS Attention of Black-CEO Led Firms

VARIABLES	(1) IRS Attention	(2) IRS Attention	(3) IRS Attention	(4) IRS Attention
BLACKCEO	0.399***	0.340**	0.340**	0.329**
	(3.35)	(2.27)	(2.38)	(2.11)
LN(AT)	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

This table presents the results of ordinary least squares regressions estimating Equation (1) estimated 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 variable of interest is *BlackCEO,* which is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. 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. Standard errors are clustered at the firm level and shown in parentheses.

Table 4 – Tax Aggressiveness of Black-CEO Led Firms

VARIABLES	(1) BTD2	(2) PBTD2	(3) GETR3_adj	(4) CETR3_adj	(5) UTB	(6) Shelter	(7) 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
LN(AT)	-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

This table presents the results of ordinary least squares regressions estimating Equation (2) estimated using entropy balancing. The dependent variables are measures covering the entire spectrum of tax avoidance, with column (1) representing legitimate positions to column (7) capturing tax haven usage. The main variable of interest is *BlackCEO*, which is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. 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. Standard errors are clustered at the firm level and shown in parentheses.

Table 5 – IRS Attention of Asian-CEO Led Firms

VARIABLES	(1) IRS Attention	(2) IRS Attention	(3) IRS Attention
ASIANCEO	0.012	0.012	0.043
	(0.16)	(0.17)	(0.62)
SIZE	0.296***	0.282***	0.293***
	(10.38)	(10.02)	(10.54)
MB	-0.006	-0.005	-0.004
	(-0.64)	(-0.54)	(-0.39)
MNE	0.478***	0.274***	0.160**
	(6.11)	(3.66)	(2.21)
CASH	-0.288	-0.374**	-0.331*
	(-1.63)	(-2.10)	(-1.80)
INVENTORY	0.393	0.262	-0.698*
	(1.27)	(0.86)	(-1.65)
LEVERAGE	0.125	0.056	-0.125
	(0.70)	(0.32)	(-0.76)
R&D	0.918**	0.156	0.053
	(2.00)	(0.35)	(0.10)
ROA	1.331***	0.855**	0.298
	(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	10,126	10,126	10,126
Adjusted R-squared	0.275	0.297	0.335
Industry FE	No	No	Yes
Year FE	Yes	Yes	Yes

This table presents the results of ordinary least squares regressions estimating Equation (1) by replacing *BlackCEO* with *AsianCEO,* and estimated 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 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. 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. Standard errors are clustered at the firm level and shown in parentheses.

Table 6 – Effect of Resource Constraints on IRS Attention

IRS RESOURCES	(1) Total Hours per Audited Return	(2) 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

This table presents the results of ordinary least squares regressions estimating a modified version of Equation (1) estimated 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 hours per audited return in column (1), while in column (2), it is measured as the inflation adjusted enforcement budget per audited return. *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 variable of interest is the interaction of *BlackCEO* with *I(IRSRES)*. 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. Standard errors are clustered at the firm level and shown in parentheses.

Table 7 – Tax Monitoring of Black-CEO Led Firms

VARIABLES	PANEL A		
	(1) TAX MONITOR	(2) TAX MONITOR	(3) TAX MONITOR
BLACKCEO	0.088***	0.088***	0.089***
	(3.17)	(3.16)	(3.69)
SIZE	0.036***	0.034***	0.034***
	(5.01)	(5.15)	(5.49)
MB	0.000	0.000	0.003*
	(0.11)	(0.18)	(1.69)
MNE	-0.069*	-0.066	-0.037
	(-1.67)	(-1.54)	(-1.19)
CASH	0.160	0.110	-0.066
	(1.52)	(1.10)	(-0.88)
INVENTORY	-0.243	-0.235	-0.011
	(-1.39)	(-1.40)	(-0.07)
LEVERAGE	-0.089	-0.101	-0.064
	(-1.15)	(-1.32)	(-1.06)
R&D	0.380***	0.322**	0.234*
	(3.12)	(2.06)	(1.76)
ROA	0.213	0.164	0.239
	(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	8,803	8,803	8,803
Adjusted R-squared	0.111	0.117	0.199
Industry FE	No	No	Yes
Year FE	Yes	Yes	Yes

This table presents the results of using an alternate measure to capture monitoring by the IRS. The dependent variable is *Tax Monitor,* measured as one minus the lapses in unrecognized tax benefits (UTB) due to expiry of stature of limitations in the period t to t+3, divided by the UTB in the year t. *BlackCEO* is an indicator variable equal to 1 for firm-years with Black individuals as CEO and zero otherwise. 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. Standard errors are clustered at the firm level and shown in parentheses.

Table 8 – Tax Settlements of Black-CEO Led Firms

VARIABLES	(1) TAX SETTLE	(2) TAX SETTLE
BLACKCEO	-0.128***	-0.132***
	(-3.09)	(-3.31)
SIZE	0.043***	0.015
	(3.20)	(1.39)
MB	-0.006	-0.037
	(-1.56)	(-1.50)
MNE	0.101	0.052***
	(1.41)	(3.50)
CASH	0.109	-0.007*
	(0.59)	(-1.68)
INVENTORY	0.828**	0.116*
	(2.01)	(1.74)
LEVERAGE	0.085	0.155
	(0.80)	(0.94)
R&D	0.488	0.739*
	(1.03)	(1.89)
ROA	0.101	0.060
	(0.37)	(0.57)
GAAPETR		0.661
		(1.29)
UTB		0.018
		(0.06)
Observations	8,803	8,803
Adjusted R-squared	0.159	0.167
Industry FE	Yes	Yes
Year FE	Yes	Yes

This table presents the results of estimating the effect of having Black-CEOs on IRS settlement revenue from UTB settlements. *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. 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. Standard errors are clustered at the firm level and shown in parentheses.