

# Patrolling the Securities Laws: Towards the SEC's Investigation of Founder-CEO Firms<sup>†</sup>

Yang Bai

Inder K. Khurana

Ruixiang Wang

July 16, 2023

## Abstract

Founder-CEO firms are associated with smaller discretionary accruals, higher return on assets, lower stock return volatility, and lower likelihood of shareholder litigation relative to non-founder-CEO firms. Yet, we find that founder-CEO firms are 18% more likely than an average firm to be investigated in secrecy by the enforcement division of the Securities and Exchange Commission (SEC). This finding is robust to two instrumental variable regressions and a stacked difference-in-differences design, which alleviate the endogeneity concerns. Our channel analyses support the conjecture that the SEC's interest in founder CEOs is primarily due to their idiosyncratic attributes, such as power, overconfidence, and risk-taking, highlighting the screening aspect of the SEC investigation as opposed to its punitive aspect. Further analyses show that founder CEOs' visibility is positively associated with the likelihood of an SEC investigation against their firms. The SEC's corporation finance division is also more likely to issue comment letters to founder-CEO firms. Overall, our findings are of potential interest to firms and investors interested in learning about SEC investigation risk, regulators concerned about founder-CEO firms, and academics studying SEC surveillance.

**Keywords:** AAER enforcement action, CEO power, comment letters, founder CEO, Google Search index, overconfidence, SEC investigation

**JEL Code:** G38, K40, M40, M48

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<sup>†</sup> Yang Bai ([yangbai@mail.missouri.edu](mailto:yangbai@mail.missouri.edu)) and Inder K. Khurana ([khurana@missouri.edu](mailto:khurana@missouri.edu)) are at the Robert J. Trulaske Sr., College of Business, the University of Missouri. Ruixiang (Ray) Wang ([ruixiang@clark.edu](mailto:ruixiang@clark.edu)) is at the School of Management, Clark University.

We would like to thank Fred Bereskin, Shawn Huang, Hoyoun Kyung, Mani Sethuraman for their helpful comments.

*“An investigation is not the same as a prosecution. Investigations involve fact finding by the Commission staff and are usually not public. In this way, the mere existence of an investigation does not harm an individual or entity. During an investigation, neither the staff nor the Commission makes any determination of wrongdoing...”*

— Linda Chatman Thomsen, Former Director of the SEC Enforcement Division, 2005<sup>1</sup>

*“That’s like having a gun to your child’s head. So I was forced to concede to the SEC unlawfully, those bastards...”*

— Elon Musk, TED Conference, Vancouver, April 14, 2021<sup>2</sup>

## **1. Introduction**

The Division of Enforcement of the US Securities and Exchange Commission (SEC) conducts investigations in secrecy to detect potential violations of securities laws. Like the police patrol, the SEC investigation is a preventive screening process because the enforcement division cannot predict real violations. Evaluating whether to convert a matter under inquiry to an open investigation depends on “whether, and to what extent, the investigation has the potential to address violative conduct” (SEC 2017).<sup>3</sup> Moreover, these investigations are selective due to limited resources (Kedia and Rajgopal 2011). Because of their selective nature, SEC investigations can impose a direct statistical selection bias on subsequent enforcement actions, increasing the likelihood of a missed fraud (Dyck et al. 2023; Kubic 2021). For example, after Madoff’s Ponzi scheme, the Office of Inspector General concluded that the enforcement division had “more than ample” information to warrant a full investigation against Madoff, but it never happened.<sup>4</sup>

Target firms are also not required to publicly disclose ongoing SEC investigations (Koeltl 2016). Nevertheless, receiving an investigation request from the SEC can be costly to the target

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<sup>1</sup> See the remarks of Linda Chatman Thomsen at the 2005 program of the International Institute for Securities Market Development hosted by the SEC’s Office of International Affairs:  
[https://www.sec.gov/about/offices/oia/oia\\_enforce/overviewfor.pdf](https://www.sec.gov/about/offices/oia/oia_enforce/overviewfor.pdf).

<sup>2</sup> See Hawkins (2022).

<sup>3</sup> Citing SEC (2011), Blackburne et al. (2020) report that “between 1992 and 2010, the SEC closed roughly 45% of MUIs without ever opening an investigation.”

<sup>4</sup> See the investigation report by the SEC’s Office of Inspector General (OIG) on the failure of investigating Bernard Madoff: <https://www.sec.gov/news/studies/2009/oig-509.pdf>.

firm and its top executives. Target firms may have to secure outside counsel and conduct comprehensive reviews to respond to the SEC's investigation (Calluzzo et al. 2021). Solomon and Soltes (2021) find that stocks of firms voluntarily disclosing SEC investigations underperform non-sanctioned firms that stayed silent by 12.7% in the year after the investigation began. SEC investigations can also cost top executives via reduced firm equity value, involuntary turnover, and negative labor market outcomes (Karpoff et al. 2008b). Despite such adverse consequences of SEC investigations, research related to the regulatory process itself is very limited, and the SEC investigations themselves remain a black box. In this paper, we leverage the investigation data obtained from the SEC to provide new insights into the SEC's investigation process. Specifically, we model the SEC's likelihood of initiating investigations against founder-CEO firms to examine the role that founder-CEO characteristics play in these investigations.

We focus on founder CEOs because they are more influential than other CEOs (Donaldson and Lorsch 1983; Finklestein 1992). Founders are the power engine of Schumpeter's creative destruction (Gans et al. 2002). They lead more than 10% of the largest firms in the US, and they are vested with decision rights in relation to matters such as firm financing, operations, and investments that can affect firm performance (Fahlenbrach 2009). Despite greater control rights, founder-CEO firms are associated with higher valuations, higher return on assets, and lower borrowing costs (Adams et al. 2009; Anderson et al. 2009; Lee et al. 2017; Villalonga and Amit 2006). Notwithstanding the superior outcomes associated with founder-CEO firms, founder CEOs often consider their firms to be their legacies, and their attributes differ from those of professional CEOs. To this end, they often possess concentrated power, exhibit overconfidence, and take excessive risks (e.g., Adams et al. 2009). Furthermore, founder interests are often not aligned with those of outside shareholders, which can disincentivize external monitoring, reduce firm

transparency, and enable more extraction of private benefits from minority investors (Anderson et al. 2009).<sup>5</sup> Meanwhile, founder CEOs steer the direction of their firms and are constantly under the media spotlight; some of them take an adversarial stance against the SEC.<sup>6</sup> Holzman et al. (2023) find that public attention is a factor in the SEC’s selection of enforcement targets. As such, we provide evidence on whether founder-CEO characteristics influence the SEC’s investigation process. Specifically, we examine whether founder CEOs’ power, overconfidence, risk-taking, and visibility affect the SEC’s decision to undertake undisclosed investigations of founder-CEO firms.

Utilizing SEC investigation records obtained through Freedom of Information Act (FOIA) requests and hand-collected founder data covering Standard & Poor’s (S&P) 1500 firms from 1997 to 2016, we find that the SEC’s enforcement division investigates founder-CEO firms more frequently.<sup>7</sup> Specifically, firms led by founder CEOs are 0.8% more likely to be investigated by the SEC, an increase of 18% relative to the unconditional mean probability of an SEC investigation of 4.4%.

As with other empirical corporate studies on governance, we recognize that our analyses might be subject to endogeneity concerns because founder-CEO appointment is arguably endogenously determined. Additionally, founder-firm behavior is endogenously determined by the founder CEOs’ unobservable heterogeneities. To confirm the causal relation between founder CEOs and SEC investigation, we employ several identification strategies. First, we use the founder’s past founding experience before the existence of the current firm as an instrumental variable (IV), and the two-step IV probit regression supports our main results. Second, following

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<sup>5</sup> As an example, founder-CEO Mark Zuckerberg easily executed his dominant control based on dual-class voting rights and blocked the motion by several institutional investors to decouple the positions of CEO and Chair of Meta in 2018. See Seetharaman (2018).

<sup>6</sup> For example, see Krisher (2022) and Kolodny (2023).

<sup>7</sup> We obtain records of only closed cases from 1996 to early 2017 in calendar years. Because we use SEC investigations lagged one period as a control variable in our empirical models, our sample covers fiscal years 1997–2016.

Adams et al. (2009), we use the number of founders as another IV and find that our inferences remain the same. Third, we adopt a stacked difference-in-differences (DID) design by examining the impact on the likelihood of an SEC investigation after an exogenous departure of a founder CEO due to death and illness. We form a stacked sample, splitting the founder-CEO firms into a treatment group influenced by a founder CEO's departure due to death or illness and a control group not influenced by such founder-CEO departure. Our stacked DID results show that the likelihood of an SEC investigation is reduced by 18 percentage points among the treatment group after an exogenous founder-CEO departure, which is consistent with the main result that founder-CEO firms attract more SEC investigations relative to non-founder-CEO firms.

Next, we examine two possible explanations for why the enforcement division of the SEC initiates more investigations against founder-CEO firms. One explanation is that the division relies on CEO characteristics in pursuing investigations. The SEC investigation is still a screening process, and the literature widely documents the influences of CEO characteristics on corporate outcomes.<sup>8</sup> More recently, Banerjee et al. (2018) show that overconfident CEOs and/or senior executives increase the likelihood of securities class actions. Therefore, it is possible that SEC investigations vary across founder CEOs who display idiosyncratic attributes, such as power and overconfidence, or exhibit systematic differences in risk-taking.

We find evidence consistent with the above explanation. Specifically, one standard deviation increase in the CEO's relational pay pattern, a direct measure of CEO power reflecting the relative importance of the CEO among the top executive team (Bebchuck et al. 2010), increases the likelihood of an SEC investigation by 0.6% vis-à-vis the non-founder CEOs. Moreover, when founder CEOs' overconfidence level increases from the bottom to the top quartile, the likelihood

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<sup>8</sup> For a review of the literature, see Baker and Wurgler (2013); Hanlon et al. (2022); and Malmendier (2018).

of an SEC investigation increases by 1.2%. Using innovation outcomes as proxies for risk-taking, we show that the marginal effect of patent-and-founder interaction increases the likelihood of an SEC investigation by about 0.3% vis-à-vis the non-founder CEOs. Although the investigation is usually considered as a precursor before enforcement, our results collectively suggest that the SEC's investigations of founder-CEO firms are primarily driven by the founder CEOs' characteristics, highlighting the preventive screening aspect of the SEC investigation.

The visibility of founder CEOs can also play a role in SEC investigations because these CEOs are the face of the firm and they are constantly under the spotlight.<sup>9</sup> On the one hand, CEO visibility can lower the likelihood of an SEC investigation because public attention can deter founder CEOs from engaging in potential violations of the federal securities laws and regulations. For example, Yu (2008) finds that firms followed by more analysts manage their earnings less. On the other hand, the SEC's investigations partially rely on the tips it receives, and higher CEO visibility in public outlets means more tips, which eventually can translate into more investigations, thereby enabling the SEC to mitigate the cost of appearing negligent (Holzman et al. 2023). Using the Google Search index for the CEOs as a proxy for CEO visibility, we find that founder CEOs associated with higher Google Search index are more likely to be investigated by the SEC, compared to an average firm.

A competing explanation is that the Division of Enforcement's interest in the founder CEO is driven by concerns about information opacity and potential fraud associated with their firms. For example, Dechow et al. (1996) find that founder CEOs are more likely to misstate earnings. Our evidence, however, shows that founder CEOs are associated with smaller discretionary accruals and a higher return on assets than those of other firms. Moreover, founder-CEO firms

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<sup>9</sup> For example, a single Twitter message about the SEC by Elon Musk can receive more than 100,000 likes: <https://twitter.com/elonmusk/status/1278764736876773383>.

neither elicit additional accounting and auditing enforcement release (AAER) actions nor experience an increased number of income-reducing restatements. These firms are also associated with 1.2% lower annualized monthly stock return volatility, and 11.5% lower risk of securities litigation. Taken together, these results do not appear to support the competing explanation.

Lastly, we examine whether the SEC's Division of Corporation Finance, which reviews each firm's 10-K filing periodically and issues comment letters about firms' disclosure in financial reports, exhibits interest in founder-CEO firms analogous to that documented for the investigations by the SEC's Division of Enforcement. Specifically, we investigate whether the presence of a founder CEO affects the likelihood of comment letters issued by the SEC's Division of Corporation Finance. We find that compared to non-founder-CEO firms, founder-CEO firms are associated with about a 2% higher likelihood of receiving comment letters for their 10-K filings, suggesting that the Division of Corporation Finance, like the Division of Enforcement, also exhibits a higher level of interest in founder-CEO firms. Collectively, our results suggest that founder-CEO firms and the characteristics of founder CEOs matter in general for SEC surveillance.

Our findings contribute to prior research in several dimensions. First, our study contributes to the literature on SEC oversight and the role of CEOs in strategic decision-making. Recent research on SEC regulation indicates that the SEC exercises considerable discretion in selecting enforcement targets (Dyck et al. 2023; Baugh et al. 2022; Do and Zhang 2022; Ege et al. 2019; Donelson et al. 2022; Kalmenovitz 2020). Other research identifies several firm characteristics related to the likelihood of a firm receiving an AAER action or being a target of undisclosed SEC investigations (e.g., Bonsall et al. 2022; Coleman et al. 2021; Correia 2014; Heese 2019; Holzman et al. 2023). A separate but related stream of literature emphasizes the role of CEOs and their characteristics in general, and founder CEOs in particular, in affecting firm outcomes (Adams et

al. 2009; Ahmed and Duellman 2013; Fahlenbrach 2009; Gervais et al. 2011; Goel and Thakor 2008; Graham et al. 2013; Hambrick and Mason 1984; Hackbarth 2009; Heaton 2002; Hirshleifer et al. 2012; Malmendier and Tate 2005; Villalonga and Amit 2006; among others). We complement these two streams of research by linking the founder-CEO status to the likelihood of encountering an SEC investigation. Consistent with the merits of the founder CEOs in the prior literature, we document that their firms exhibit higher financial reporting quality and superior accounting performance. And yet, the founder-CEO firms attract more of the SEC's attention in pursuing investigations than non-founder-CEO firms. In other words, we find that the SEC treats founder-CEO firms differently when choosing investigation targets.

We also provide novel insights into the role the founder CEOs' characteristics play in the SEC regulatory oversight. We find that the founder CEOs' power, overconfidence, and risk-taking actions draw the SEC's attention to founder-CEO firms, which is consistent with the notion that the SEC's interest in investigating founder-CEO firms is driven by the screening objective instead of the punitive objective of the Commission, despite the close relation between SEC investigation and SEC enforcement actions. Our findings contrast with the understanding of investors, who interpret the SEC investigation primarily as a negative regulatory event (Solomon and Soltes 2021).

Our study is most closely related to Holzman et al. (2023), who find that the SEC investigation is associated with a target firm's likelihood of regulatory noncompliance and exposure to private and public scrutiny. There is, however, a key difference that distinguishes our study from Holzman et al. (2023) in that ours is more focused on a special yet important type of firms and their CEOs. Using more granular (CEO-specific characteristics) data, our paper adds to the findings of Holzman et al. (2023) by showing that characteristics of founder CEOs are relevant in explaining the likelihood of an SEC investigation.



Our second contribution is to the literature examining the effects of CEO visibility in particular. Several studies find evidence consistent with boards of directors considering CEO media visibility in compensation decisions (e.g., Falato et al. 2015; Malmendier and Tate 2009; Milbourn 2003; Rajgopal et al. 2006). Consistent with the reputation concern rationale, other research finds that media coverage affects firms' information environments (e.g., see a review by Blankespoor et al. 2020). The implication is that CEO visibility potentially lowers the likelihood of an SEC investigation. Alternatively, higher CEO visibility could yield more tips to the SEC, which eventually can translate into more investigations. Our evidence that the founder CEO's visibility generally leads to more SEC investigations for founder firms is consistent with the latter explanation, thereby expanding our understanding of the implications of CEO visibility.

The remainder of the paper is organized as follows. Section 2 summarizes the SEC investigation and enforcement process, discusses the data, and provides summary statistics. In section 3, we present our research design and empirical results. Section 4 concludes the paper.

## **2. Background, Data Sources, and Descriptive Statistics**

### **2.1 Background of the SEC Investigation and Enforcement Process**

The SEC, an independent agency of the US federal government, was created after the Wall Street Crash of 1929 with the primary mission to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. Within the SEC, there are five divisions headquartered in Washington, DC, and 11 regional offices throughout the US. Of direct relevance to our study are the Division of Enforcement and the Division of Corporation Finance. The Division of Enforcement conducts investigations into possible violations of the federal securities laws and litigates the SEC's enforcement actions, while the Division of Corporation Finance reviews corporate filings and issues comment letters outlining questions and concerns about the

disclosure in financial reports.<sup>10</sup> The two divisions police public companies by applying relatively scarce resources into investigative tools.

Figure 1 summarizes the enforcement process at the SEC. The Division of Enforcement staff identifies a suspicious target with potential violation of the securities laws based on tips, complaints, and referrals submitted by the public, self-regulatory organizations, and others. The staff then sends out an information inquiry under the Matter Under Inquiry (MUI) program, after which it decides whether to initiate a formal investigation against a potential violation. Often, a formal investigation imposes legal responsibility on the target firm to comply with the information request.

**[Insert Figure 1 Here]**

After serious fact-finding, the Division of Enforcement staff decides whether to recommend the case to the commission for enforcement. If the staff finds solid evidence that warrants charges against the target firm or an individual within the firm, the staff issues a Wells Notice to inform the target firm of its decision to recommend the case to the commission for enforcement authorizations. The chair and the commissioners of the SEC then vote on whether to authorize the Division of Enforcement to bring the case for an enforcement action.<sup>11</sup> Since the commission almost never rejects any recommended case for enforcement, the initiation of an

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<sup>10</sup> By organizational design, the Division of Enforcement does not monitor firms directly in terms of compliance but expects compliance. See <https://www.sec.gov/divisions/enforce/enforcementmanual.pdf> for the manual containing mission and guidelines for SEC investigations. In contrast, the mission of the Division of Corporation Finance is “both to monitor and to enhance compliance with disclosure and accounting requirements.” The Division of Corporation Finance undertakes a review of each registrant’s filings at least once every three years to monitor and enhance compliance with applicable disclosure and accounting rules. When the Division completes the review, it makes its comment letter(s) and registrant response(s) public on the SEC’s EDGAR system. See <https://www.sec.gov/divisions/corpfin/cfabout> for the detailed mission statement of the Division of Corporation Finance.

<sup>11</sup> Results of the Commission’s vote are on the SEC’s website: <https://www.sec.gov/about/commission-votes>.

investigation becomes the most important statistical selection step for the SEC enforcement actions.<sup>12</sup>

SEC investigations involve fact finding, and they are conducted on a confidential basis. According to the SEC's 2022 annual report, "more than two-thirds of the SEC's stand-alone enforcement actions involved at least one individual defendant or respondent," including a founder and former CEO.<sup>13</sup> Only the SEC and the key individuals at the target firm have firsthand information about the investigation. During an investigation, neither the staff nor the Commission makes any determination of wrongdoing. The target firm or individual can choose to voluntarily disclose the information about an SEC investigation, but it is not an obligation. Our goal in this study is to leverage the investigation data obtained from the SEC, through Freedom of Information Act (FOIA) requests, to provide new insights into the SEC's investigation process by modeling the likelihood of an SEC investigation against founder-CEO firms.

## 2.2 Data

We construct our sample using multiple sources of data. Our sample selection begins with the retrieval of all data for executives with CEO titles from the ExecuComp database, which covers S&P 1500 firms. We manually collect information about their founders, including the founders' past founding experience prior to the existence of the current firms and the number of founders at the firm level. Next, we follow Anderson and Reeb (2003) in defining a family firm as a firm in which a founder and/or any family members by kinship or marriage hold(s) more than 5% stake in the firm, either individually or collectively. We then obtain the SEC investigation record through

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<sup>12</sup> Based on our examination of the decisions on enforcement recommendations published by the SEC, we conclude that the commission basically never votes against the recommendation of the staff of the Division of Enforcement. In other words, if there is some statistical selection for a case, it will *only* show up in the initiation of investigation. The Division of Enforcement staff has the right but not the obligation to issue the letters to the target firm or individual.

<sup>13</sup> <https://www.sec.gov/news/press-release/2022-206>.

FOIA requests. We first apply optical character recognition to the digitized investigation record of the SEC. We then fuzzy match the digitized record to the top 20 candidates from the Compustat database and manually select the match for each record. Because we focus on a firm's fiscal years for our empirical analyses, we flag a fiscal year as 1 if there is an SEC investigation associated with the fiscal year, 0 otherwise. Because of the availability limits of the SEC investigation data, we start our sample in 1997 and end our sample in 2016.

We obtain financial statement information, stock price data, and analyst coverage information from Compustat, CRSP, and I/B/E/S databases, respectively. We obtain data on restatements and comment letters from Audit Analytics database. To identify a sample of detected frauds, we rely on the AAER database from the University of Southern California (Dechow et al. 2012), updated in 2018, which includes usable observations up to 2016. We obtain firm-level lobbying expenditures from the OpenSecret website, which are then fuzzy-matched to the Compustat data. To control the influence of the SEC's personnel changes in our regressions, we manually collect information on the SEC chairs and the directors at the SEC's regional offices during our sample period. After dropping observations with missing values for the control variables required for the analyses, our sample consists of 26,751 firm-year observations (2,882 unique firms) covering a 20-year time period from 1997 to 2016. For some of the tests, there are fewer observations due to additional data limitations. For example, we obtain data for securities lawsuits from Audit Analytics, which has data starting from 2000.

### **2.3 Summary Statistics**

In Table 1, panels A and B present summary statistics for selected variables, which are defined in the Appendix Table A1. About 4.4% of our firm-year observations are associated with an SEC investigation. Founder CEOs are found in 31% of the firm-years, and about 28% of the

observations are family firms.<sup>14</sup> Because our sample covers S&P 1500 firms, our sample firms are larger and more mature than the population of all firms on Compustat. About 27% of the firm years are associated with the issuance of comment letters by the Division of Corporation Finance, and about 1.4% of the firm-years entail an AAER. Panel C reports the results of the test to examine the difference between the investigation probability of the founder-CEO sample and each of the two propensity score–matched (PSM) non-founder-CEO samples, with and without replacement.<sup>15</sup> We find that the likelihood of an SEC investigation is higher for founder-CEO firms than for the non-founder-CEO firms.

**[Insert Table 1 Here]**

### 3. Research Design and Empirical Results

#### 3.1. Main Regression: SEC Investigations and Founder-CEO Status

To shed light on the relation between founder-CEO status and SEC investigations, we estimate the following probit model.<sup>16</sup>

$$\Phi^{-1}(SEC\ Investigation_{i,t}) = \beta Founder\ CEO_{i,t} + \mathbf{Controls} \cdot \mathbf{\Gamma} + \varepsilon_{i,t}, \quad (1)$$

where “ $\cdot$ ” denotes the matrix multiplication, the subscripts  $i$  and  $t$  represent the specific firm and year, respectively, and *SEC Investigation* is an indicator variable equal to 1 if the firm-year is under

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<sup>14</sup> The *Founder CEO* variable is not fully conditional on family firm because some founders hold less than 5% of stock in their firms; as a result, these are not identified as family firms, which is consistent with approach used by Anderson and Reeb (2003).

<sup>15</sup> PSM samples are formed based on the Mahalanois distance matching methods using all control variables (except for the fixed effects) used in estimating Equation (1) described below. While we report results for PSM samples with and without replacement, we caution the reader to be cognizant of the caveats associated with PSM with replacement (See Austin 2013).

<sup>16</sup> While our paper reports the probit model results, we also perform linear probability estimations for all the tests because Greene (2004) suggests that linear models can accommodate a large number of industry- and year-fixed effects with fewer estimation biases than nonlinear models. Untabulated results using linear probability models are *completely* in line with those reported in the paper using the probit models.

the SEC's undisclosed investigation, 0 otherwise.<sup>17</sup> Because Karpoff et al. (2017) report that a formal investigation begins about 2.28 months after the trigger event, we lag the investigation date by 3 months to pinpoint the approximate start date of the SEC's interest in a potential target firm and control for the fiscal period information around that point in time.<sup>18</sup>

The explanatory variable of interest is *Founder CEO*, which is an indicator variable equal to 1 if the CEO of the firm is also a founder of the firm, 0 otherwise. The vector *Controls* includes control variables based on prior research, and they are defined in the Appendix and described in detail below. In addition to industry and year fixed effects in the alternative specifications of Equation (1), we also include fixed effects for the SEC chair and the SEC director to control for differential implementation of regulations by the US regulators (e.g., Agarwal et al. 2014; Correia 2014; Kedia and Rajgopal 2011).<sup>19</sup>

Our focus is on the coefficient  $\beta$ , which reflects the change in the inverse normal scaled investigation likelihood  $\Phi^{-1}(SEC\ investigation_{i,t})$ , or the z score of the SEC investigation probability attributable to the founder CEO indicator variable ( $Founder\ CEO_{i,t}$ ). A positive  $\beta$  coefficient would indicate a positive relation between the likelihood of an SEC investigation and the presence of founder CEOs. Because nonlinearity makes probit coefficients difficult to interpret directly, we report average marginal effects (the average of partial derivatives of the probit function with respect to the variable of interest at each possible value that the variable can take).

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<sup>17</sup> To model conditional probability, we express the empirical model assuming additive error terms and derive it by relying on the following:  $P(SEC\ Investigation = 1|X) = \Phi(X^T\beta) \Leftrightarrow \Phi^{-1}[P(SEC\ Investigation = 1|X)] = X^T\beta$ .

<sup>18</sup> We report the regression results based on the assumed starting point of the SEC's interest in a target firm as a way to control for the concurrent information of founder-CEO status and the ex post financial performance, which can capture information that is not publicly available at the time of the initiation of SEC investigation. Our results are robust to other alternative model specifications, including when we control for the lagged financial performance and predict the probability of investigation using a 12-month trailing period.

<sup>19</sup> We do not use firm fixed effects in our estimations of Equation (1) because our main explanatory variable (*Founder CEO*) varies little over time for a given firm.

For example, we evaluate these partial derivatives across the nonlinear surface of the model with respect to the founder CEO. To assess statistical significance, we calculate the standard errors of marginal effects clustered at the firm level.

We include a broad set of control variables that potentially affect the initiation of an SEC investigation. In identifying these variables, we rely on prior research examining SEC investigations as well as the determinants of accounting restatements and of receiving an SEC comment letter (e.g., Coleman et al. 2021; Johnstone and Petacchi 2017). These variables can be grouped into five categories. First, we include an indicator variable for whether a firm is a family firm as a control variable, because prior research suggests that conflicts between large and small shareholders (Agency Problem II) dominate the conflict between owners and managers (Agency Problem I) (Jensen and Meckling 1976; Villalonga and Amit 2006). Second, we include the presence of independent directors (*Board Independence*), an indicator variable for being a Fortune 500 Company (*Fortune 500*), and the state of incorporation (*Delaware Incorporation*) as control variables to account for board and governance quality. Third, we control for differences in firm fundamentals, including operational complexity ( $\ln(\# \text{Product Segments})$ ), stock volatility (*Annual Volatility*), stock market performance (*Market Adjusted Return*), firm size ( $\ln(\text{Sales})$ ), debt financing (*Leverage*), cash (*Cash Holdings*), growth opportunities (*Tobin's Q*), and firm age ( $\ln(\text{Firm Age})$ ). Fourth, we include income-reducing restatement as an additional control because a downward restatement of previously reported earnings is suggestive of lower financial reporting quality (Francis and Michas 2013). Fifth, to control the differences in SEC's enforcement activities, we use two variables. The first variable is the distance between the firm's headquarters and the SEC regional office ( $\ln(\text{SEC Distance})$ ); Kedia and Rajgopal (2011) note that geographic constraints influence SEC monitoring. The second variable we control for is a firm's lobbying expenditures ( $\ln(\text{Lobby Spending})$ ); prior research emphasizes the role of firm political connections in SEC

oversight (see, e.g., Dal Bó 2006). We also include the lag of the dependent variable (*SEC Investigation t-1*) to control for the potential effect of an earlier investigation on the same matter.<sup>20</sup>

Table 2 presents the probit regression results for estimating Equation (1) based on the full sample and a propensity score–matched sample.<sup>21</sup> Note that the observations in the first three columns for the full sample vary because we use alternative fixed effect structures, Large firms, high-volatility firms, and firms with more cash, more product segments, and the presence of income-reducing restatements are more likely to be investigated by the SEC. Firms with higher returns (*Market Adjusted Return*) are less likely to be investigated by the SEC. Other control variables are generally not significant at the 0.10 level. Irrespective of the specification used for the full-sample estimation, the marginal probability for *Founder CEO* is 0.008 and significant at the 0.05 level, indicating that founder CEOs attract SEC investigations.<sup>22</sup> In terms of economic significance, our results show that the founder CEOs’ average effect on the probability of an SEC investigation is 0.8%, which is an 18% increase compared to the unconditional probability of 4.4%. The probit regression results in the last two columns of Table 2 indicate that the basic tenor of our results continues to hold using propensity score–matched samples.

**[Insert Table 2 Here]**

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<sup>20</sup> Our inferences remain the same when we omit the lagged SEC investigation dummy as a control variable and re-estimate our models.

<sup>21</sup> To conserve space while tabulating the regression results, we limit the number of decimal digits to three, which can make the statistical significance labeled as stars (in the tables) to be inconsistent with a statistic computed by dividing the reported coefficient estimate with the reported standard error. We recommend that readers rely on the reported number of stars to interpret the level of the statistical significance.

<sup>22</sup> As a robustness test, we investigate whether our results are robust to the inclusion of additional control variables, such as dual-class status (an indicator variable equal to 1 for firms with a positive wedge between the percentage of votes and shares owned by family firms, 0 otherwise) and institutional ownership (fraction of common equity held by institutional investors). Untabulated results indicate that our results with respect to *Founder CEO* continue to hold after controlling for these additional variables.



### 3.2. Identification Strategies: Two IV Regressions and Stacked DID Design

To make a causal interpretation of a founder CEO's effect on SEC investigation, we employ two strategies, including two separate two-step instrumental variable (IV) probit regressions and a stacked difference-in-differences (stacked DID) design. In the first IV regression, the instrument (*Past Founding Experience*) is an indicator variable equal to 1 if the CEO has the experience of founding a firm prior to the founder CEO's position in the current firm, 0 otherwise. The instrument satisfies the following exclusion condition: There is no reason to suspect that the founder CEOs' past founding experience before the focal firm was founded can influence the SEC investigation of the current firm. In the second IV regression, the instrument is the number of people who founded the company. Adams et al. (2009, p. 141) note that this variable satisfies the conditions necessary for a valid instrument because "the probability that the current CEO is one of the founders is increasing in the number of founders." Assuming that we have a set of valid instruments for founder-CEO status, we can consistently estimate  $\beta$  by the following procedure: (i) estimate a binary response model (e.g., probit) of *Founder CEO* on one instrument (at a time) and other controls, (ii) compute the fitted probabilities for *Founder CEO*, and (iii) estimate  $\beta$  by instrumental variables using  $\widehat{Founder\ CEO}_i$  to instrument for founder-CEO status. Specifically, we estimate the following models:

$$Step\ 1: Founder\ CEO_{i,t} = \delta Instrument\ Variable + \mathbf{Controls} \cdot \mathbf{\Gamma}_{i,t} + \varepsilon_{i,t}, \quad (2)$$

$$Step\ 2: \Phi^{-1}(SEC\ Investigation_{i,t}) = \beta \widehat{Founder\ CEO}_{i,t} + \mathbf{Controls} \cdot \mathbf{Z}_{i,t} + \eta_{i,t}, \quad (3)$$

where the step 1 prediction of the founder CEO is the main independent variable in the step 2 regression.

In Table 3, panel A shows the results for the IV probit regressions with two different IVs: prior founding experience before the existence of the current firm, and the number of founders in

the establishment year. We establish the relevance condition for each of the IVs through their corresponding first step regressions. In the columns labeled Step 1, both of the proposed instruments are correlated with *Founder CEO*, indicating that these two instruments individually predict the likelihood of whether the current firm CEO is a founder CEO.

**[Insert Table 3 Here]**

The columns labeled Step 2 report the results from the second step of the IV probit regressions, where we regress SEC investigation on the predicted founder-CEO status from the first-step regressions using one instrument at a time. The direct effect of *Founder CEO* on SEC investigation is positive and significant at the 0.05 level and the 0.01 level in the two regressions, respectively. Unlike the results in Table 2, these results can be interpreted as evidence of a causal effect of founder CEO on the likelihood of an SEC investigation; that is, founder CEOs attract more SEC investigations.

Another identification strategy we employ relies on the exogenous turnover of founder CEOs and focuses on the subsample of founder-CEO firms. We obtain the CEO turnover dataset made available by Gentry et al. (2021).<sup>23</sup> There are nine possible terms listed as “reasons” in the dataset for a CEO’s departure: death, illness, performance, legal violation, retirement, career change, other, missing, and ExecuComp error. We view founder CEOs’ death and illness as events that the firms could not control and regard founder-CEO turnover due to these reasons as an exogenous founder-CEO turnover. Using the exogenous turnover as the treatment, we apply the stacked DID regression, covering a symmetric event window running from three years before to three years after a founder CEO’s departure, including the year of the founder CEO’s departure.<sup>24</sup>

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<sup>23</sup> The data are available at <https://zenodo.org/record/4543893#.YGYfzK9KiUk>.

<sup>24</sup> Conventional staggered DID regression technique suffers from mismatched comparison problem, which can lead to an estimation bias. To address this issue, we follow Cengiz et al. (2019) and Deshpande et al. (2019) and apply the stacked regressions to our setting.

We classify firms that experience an exogenous founder-CEO turnover in year  $t$  as the treatment group, and all other firms that have no prior experience of exogenous founder-CEO turnover as the control group. Because we operate in fiscal years, we flag the year  $t$  to year  $t + 2$  as the years post-treatment. We roll the six-year window through our sample and stack windows together to form a single sample for our DID regression.<sup>25</sup> We fit the following stacked DID model using ordinary least square (OLS) estimation.

$$SEC\ Investigation_{i,t} = \beta_1 Treatment_i \times Post_t + \beta_2 Treatment_i + \beta_3 Post_t + \mathbf{Controls} \cdot \mathbf{\Gamma}_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where *Treatment* equals 1 if the founder CEO departs because of death or illness, 0 otherwise. *Post* equals 1 for the year  $t$  to year  $t+2$  after the founder CEO's departure for exogenous reasons, 0 for the three years before the CEO's exogenous departure. All other variables are defined as before.

The coefficient of interest is  $\beta_1$ , which captures the change in the likelihood of an SEC investigation around founder CEO departure for treated firms. A negative  $\beta_1$  coefficient would indicate that the likelihood of an SEC investigation decreases after the exogenous departure of a founder CEO, which would be consistent with the notion that the likelihood of SEC investigation is higher for founder-CEO firms.

Panel B of Table 3 shows the results for the stacked DID regressions with different fixed effect combinations. The negative and significant coefficients on *Treatment*  $\times$  *Post* suggest that irrespective of the fixed effects specification used, the likelihood of an SEC investigation decreases from the three years before to the two years after founder-CEO departure. The likelihood of SEC investigation is reduced by 15% following the exogenous turnover of the founder CEOs. The stacked DID regressions provide strong support to our findings from the main regression and

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<sup>25</sup> Our results are robust to using alternative stacked windows of five and seven years.

remove any residual concern that confounding sources other than the founder-CEO status drive the results. Collectively, our empirical tests in identifying the causal relation confirm that the founder CEOs attract more SEC investigations, and that the relation is causal.

### **3.3 Channel Tests**

We next examine the mechanisms (channels) most likely to explain our findings. The opening quote by Linda Chatman Thomsen above states that the department does not make any presumptions about the nature of the target firm's conduct. Therefore, we first examine whether the investigation of founder-CEO firms is triggered by the screening purpose based on the unique characteristics attributable to a founder CEO. We seek evidence related to the founder characteristics that separate the founder-CEO firms apart from other firms. Second, we also examine whether the SEC investigation on founder-CEO firms is related to information opacity, such as the absolute value of discretionary accruals, income-reducing restatements, and AAERs. The absolute value of discretionary accruals often signals the flexibility executives have in managing earnings because managers can have incentives to manage earnings upward or downward depending on the circumstances (e.g., Healy 1985), while overstated earnings that were subsequently corrected by a downward restatement and AAER enforcement actions are often viewed as reflecting low financial reporting quality and potentially financial reporting misconduct, respectively, which can in turn lead to a higher likelihood of an SEC investigation.

#### **3.3.1 Tests of CEO Characteristics: Power, Overconfidence, and Risk-Taking**

A growing strand of research explores the relation between CEO style and firm outcomes. These studies have examined traits such as power (e.g., Adams et al. 2009; Finkelstein and Hambrick 1996), overconfidence (e.g., Ben-David et al. 2013; Gervais et al. 2011; Goel and Thakor 2008; Graham et al. 2013; Hirshleifer et al. 2012; Malmendier and Tate 2005), and risk-

taking (e.g., Graham et al. 2013). These elements of founder-CEO style can attract the SEC's attention. For example, Banerjee et al. (2018) show that overconfident CEOs increase the likelihood of securities class actions, while Ahmed and Duellman (2013) show that overconfident managers use less conservative accounting. Prior research also notes that founder CEOs often exert overly concentrated power, exhibit overconfidence, and take more risks (e.g., Adams et al. 2009). If the SEC investigation is partially driven by the SEC's screening demand, then these CEO characteristics can be a channel that attracts SEC scrutiny. As such, we focus on three CEO characteristics identified in prior literature as the potential channels. Specifically, we investigate whether CEO power, CEO overconfidence, and CEO risk-taking are possible reasons behind the SEC investigation against founder-CEO firms.<sup>26</sup>

We start our channel analysis with proxies for the three CEO characteristics: CEO power, CEO overconfidence, and CEO risk-taking. First, we use the CEOs' relational pay pattern among executives (pay slice) as a proxy for power. The idea is that CEOs with a higher pay slice of the aggregate compensation of the top five executives can reflect the CEO's relative power and ability to extract rents (Bebchuk et al. 2011). Second, following Malmendier and Tate (2005), our measure of CEO overconfidence draws on CEOs' option exercise behavior. The idea is that CEOs who delay the exercise of their options are likely overconfident about firm prospects. Specifically, we proxy CEO overconfidence with the quartile rank based on CEO's *unexercised* in-the-money call options as part of their compensation. Third, we use patent data from Kogan et al. (2017) to

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<sup>26</sup> Because other unobservable elements of CEO style (e.g., optimism) may be correlated with the three proxies we use, we acknowledge that our results cannot rule out the possibility that other elements of CEO style may exhibit a relation with the SEC investigations.

proxy for the level of risk-taking using three measures: number of approved patents, patent values, and number of forward-looking patent citations.<sup>27</sup>

To examine the role that these three CEO characteristics play in affecting the SEC’s decision to investigate, we modify Equation (1) by incorporating a main effect for the CEO characteristic along with an interaction term between the characteristic and the firm-level founder-CEO status, and estimate the following probit regression:

$$\Phi^{-1}(SEC\ Investigation_{i,t}) = \beta_1 Founder\ CEO_{i,t} \times Channel_{i,t} + \beta_2 Founder\ CEO_{i,t} + \beta_3 Channel_{i,t} + \mathbf{Controls} \cdot \mathbf{\Gamma}_{i,t} + \varepsilon_{i,t}, \quad (5)$$

where  $\beta_1$  is our main variable of interest. A positive and statistically significant  $\beta_1$  coefficient would indicate that founder CEOs attract SEC investigation through the channel variables. If both  $\beta_1$  and  $\beta_2$  are positive and statistically significant, we would conclude that the effect through the interaction term is a partial mediation effect—that is, the founder-CEO effect on SEC investigation risk is partially accounted for by the channel variable. If  $\beta_1$  is positive but  $\beta_2$  is not significant, we would conclude that the effect through the interaction term is a mediation effect—the founder-CEO effect on SEC investigation risk is solely driven by the channel variable.

Table 4 reports the regression results using CEO power and CEO overconfidence as conditioning variables, one at a time. In columns (2) and (4), the coefficients on the interaction of *Founder CEO* with *Power* and *Overconfidence* are positive and significant at the 0.05 level, and these interaction terms completely absorb the effect of *Founder CEO*. These results indicate that both CEO power and CEO overconfidence are important channels of founder CEO’s effect on the risk of an SEC investigation. The average marginal effects suggest that a one-standard deviation

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<sup>27</sup> We obtain the official data set from Kogan et al. (2017) at their github page: <https://github.com/KPSS2017/Technological-Innovation-Resource-Allocation-and-Growth-Extended-Data..>

increase in the founder-CEO pay slice increases the likelihood of an SEC investigation by 0.6% (parameter estimate of 0.047 times the standard deviation of 0.12 for the *CEO Power* variable), while the likelihood of an SEC investigation of a founder CEO increases by 1.2% (parameter estimate of 0.004 times 3, the change from the bottom to the top quartile) when the CEO's unexercised in-the-money call options in her compensation moves from the bottom to the top quartile. These effects translate to a 13% and a 27% increase in the SEC investigation likelihood when we compare the effects of the interaction of CEO power and CEO overconfidence to the average SEC investigation likelihood of 4.4%.

**[Insert Table 4 Here]**

Next, we investigate whether our proxies for risk-taking serve as another channel of founder-CEO effect on the risk of an SEC investigation. We report the results in Table 5. In columns (2), (4), and (6), the coefficients of *Founder CEO* are not significant at the 0.10 level, while the coefficients on the interaction of *Founder CEO* with the three risk-taking proxies are positive and significant; two of them at the 0.05 level and one at the 0.01 level. In terms of economic magnitude, the coefficient of 0.003 in column (2) suggests that the risk-taking channel increases the SEC investigation risk by 0.3%, which is equivalent to a 7% increase relative to the risk of an average firm. In short, the risk-taking variables completely absorb the founder-CEO effect, which supports the conclusion that risk-taking behavior is an important channel through which the founder CEOs attract SEC investigation.

**[Insert Table 5 Here]**

### **3.3.2 Test of CEO Visibility**

Prior research indicates that CEO visibility, such as media coverage, significantly impacts firm value and CEO career outcomes (Blankespoor and deHaan 2020; Falato et al. 2015;

Malmendier and Tate 2009; Kang and Kim 2017; Rajgopal et al. 2006). In a recent survey of 1,700 non-CEO executives, nearly half of the respondents agreed that the CEO's media presence plays a significant role in their external reputation, and more than 80% agreed that CEO visibility is important for the firm's reputation (Weber Shandwick 2015). Meanwhile, investors' attention, such as from analyst coverage or institutional ownership, can help discipline firms. In general, CEO visibility can affect the firm's visibility to, and interactions with, multiple stakeholders, including policymakers and regulators such as the SEC. This may be especially significant for founder CEOs, who consistently attract public attention.

While founder-CEO visibility can deter misconduct, thereby lowering the likelihood of an SEC investigation, it could also increase pressure on the SEC to initiate an investigation against founder-CEO firms. For example, Holzman et al. (2023) finds evidence consistent with the notion that the SEC select cases to mitigate the cost of appearing negligent. Therefore, we examine whether founder-CEO visibility affects the likelihood of an SEC investigation against their firms. We use Google Search trend API to obtain the CEO's search index and use it to derive two measures of CEO visibility.<sup>28</sup> The first one is the raw value of the index and the second one is the CEO-level 12-month autoregressive residual within a fiscal year to capture a shock to public attention. We use these two measures, one at a time, for the channel variable in Equation (5) and re-estimate the model.

Table 6 presents the regression results. In columns (2) and (4), the coefficients on the interaction of *Founder CEO* with the two alternate proxies for CEO visibility are positive and significant at the 0.01 and 0.05 level, respectively. The marginal effects of the two proxies based on the Google Search index, conditional on the founder-CEO, are 0.4%, implying a 7% increase

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<sup>28</sup> Google only provides historical search data from 2004, and thus, the data availability is for a shorter period.



in the SEC investigation likelihood relative to an average firm. Thus, our test results show that CEO visibility is an additional channel that affects the likelihood of SEC investigations against founder-CEO firms.

**[Insert Table 6 Here]**

### 3.3.3 Tests of Information Opacity

In this subsection, we examine whether founder-CEO firms differ systematically from other professional CEO firms with respect to information opacity, and assess the implications of any differences on SEC investigation. To examine information opacity, we estimate the following model:

$$\text{Information Opacity} = \beta \text{Founder CEO}_{i,t} + \mathbf{Controls} \cdot \mathbf{\Gamma}_{i,t} + \varepsilon_{i,t}, \quad (6)$$

where *Information Opacity* includes three financial reporting quality metrics, such as absolute value of discretionary accruals, whether an income-reducing restatement is issued, and whether the firm received an AAER. Discretionary accruals represent within-GAAP earnings management (DeFond and Zhang 2014), while a restatement is suggestive of a failure to correctly apply GAAP at the time the financial statements were originally issued (Francis et al. 2013). Our third metric, an AAER action, represents a source of financial reporting misconduct (Feroz et al. 1991; Bonner et al. 1998) as Karpoff et al. (2008a) find that 75% of these actions include allegation(s) of fraud. Each of these metrics, defined in detail in the Appendix, is measured such that a higher value is indicative of higher information opacity (i.e., lower financial reporting quality). We use the same set of control variables as in Equation (1) with two exceptions: First, we do not control for income-reducing restatement when the dependent variable is the income-reducing restatement itself. Second, we include past SEC investigation as a control variable *only* when AAER is the dependent

variable. A positive  $\beta$  coefficient would indicate that founder-CEO firms exhibit more information opacity.

Table 7 reports the regression results of estimating Equation (6) using the three proxies of information opacity. In column (1), where discretionary accruals in absolute value is the dependent variable, the coefficient of *Founder CEO* is -0.003 and significant at the 0.05 level, indicating that founder-CEO firms have smaller magnitude of discretionary accruals. In column (2), where income-reducing restatement is the dependent variable, the coefficient of *Founder CEO* is not significant at the 0.10 level, indicating that founder-CEO firms are not significantly associated with more income-reducing restatements. In the last column, where *AAER* is the dependent variable, the coefficient of *Founder CEO* is not significant. These results hold after including past SEC investigations as a control variable, which partly allays the concern that the SEC investigations deter misconduct with respect to financial reporting.<sup>29</sup> Taken together, the results based on the three metrics suggest that founder-CEO firms do not appear to be managing earnings in a way that adversely affects financial reporting quality. In fact, founder-CEO firms have less information opacity as measured by the absolute value of discretionary accruals.

**[Insert Table 7 Here]**

### **3.3.4 Tests of Stock Return Volatility, Operating Performance, and Litigation Risk**

In this subsection, we examine whether founder-CEO firms differ systematically from other professional CEO firms with respect to stock return volatility, operating performance and litigation risk, and assess the implications of any differences on SEC investigation. We focus on the fiscal year stock return volatility using monthly returns (*Annual Volatility*), the return on asset

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<sup>29</sup> As another robustness test, we also interact *Founder CEO* with past SEC investigation, and untabulated results indicate that the coefficient of this interaction term is not significant, which further alleviates the concern that past investigations of the Division of Enforcement deter financial reporting misconduct.

(*ROA*), and an indicator variable to indicate if a lawsuit is brought against a firm in a year (*All Litigation* or *Shareholder Litigation*). In examining these variables, we substitute each of these variables, one at a time, as the dependent variable in Equation (6) and use the same model specification as Equation (6), excluding a control variable if it is the dependent variable we examine. A positive  $\beta$  when stock return volatility is the dependent variable would indicate that founder-CEO firms exhibit higher uncertainty. A positive  $\beta$  when *ROA* is the dependent variable would indicate that founder-CEOs positively contribute to firm performance. And a positive  $\beta$  when lawsuit dummy variable is the dependent variable would indicate that founder-CEOs firms have a higher likelihood of lawsuits against them.

Table 8 presents the regression results using *Annual Volatility* and *ROA* as dependent variables. The coefficient of *Founder CEO* is negative and significant at the 0.05 level when *Annual Volatility* is the dependent variable, indicating that founder CEOs are associated with reduced fiscal year stock return volatility by 1.2%. When *ROA* is the dependent variable, the coefficient of *Founder CEO* is positive and significant at the 0.05 level, indicating that founder-CEO firms perform better than non-founder-CEO firms. Thus, higher stock return volatility or poor operating performance of founder-CEO firms cannot be an explanation for the higher likelihood of SEC investigations of these firms.

**[Insert Table 8 Here]**

Table 9 presents the regression results for all types of lawsuits and shareholder lawsuits. In column (1), the coefficient of *Founder CEO* is negative and significant at the 0.05 level, indicating that the founder CEO firms experience a lower likelihood of lawsuits against them targeting 12%. Compared to the average firm's litigation risk of 20% for all types of lawsuits, founder CEOs reduce the general litigation risk by more than 50%. In column (2), when we restrict the sample to

shareholder-related lawsuits, we find that the coefficient of *Founder CEO* is negative and significant at the 0.10 level, indicating an 11% reduction in shareholder-related lawsuits. The economic significance of this reduction is even larger when we compare the reduction to the average level of shareholder litigation risk: the founder CEOs reduce the shareholder litigation risk by 85%. In other words, the presence of founder CEOs limits their firms' exposure to shareholder litigation in that it almost *entirely* offsets the shareholder litigation risk that an average firm would face.<sup>30</sup> In other words, CEO-founder firms experience lower likelihood of lawsuits than other firms.

**[Insert Table 9 Here]**

Collectively, our main channel results suggest that the SEC Division of Enforcement's interest in founder-CEO firms is driven by CEO characteristics, rather than information opacity issues, or concerns about stock return volatility and operating performance, or the potential for a lawsuit. Indeed, the SEC may be screening the founder-CEO firms. In other words, the SEC does not appear to lower the intensity of its investigation because of the founder firms' financial reporting quality, performance, or likelihood of being sued. Instead, the SEC investigates founder-CEO firms more frequently because of their CEOs' characteristics, which points to the preventive screening aspect of the SEC investigation as opposed to its punitive aspects, as perceived by investors (Solomon and Saltes 2021).

### **3.5 Additional Analysis**

So far, our results focus on the SEC investigations operated by the Division of Enforcement. An important question unanswered is whether the Division of Corporation Finance, a separate division of the SEC, exhibits a similar regulatory preference for founder-CEO firms. Using the

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<sup>30</sup> We also analyze other lawsuits, one at a time. Untabulated results indicate that the founder-CEO firms are less likely to be involved in environmental lawsuits, pointing to regulatory compliance.

comment letters that the Division of Corporation Finance sent to firms with questions about their 10-K filings, we estimate the following probit regression:

$$\Phi^{-1}(\textit{Comment Letter}) = \beta \textit{Founder CEO}_{i,t} + \mathbf{Controls} \cdot \mathbf{\Gamma}_{i,t} + \varepsilon_{i,t}, \quad (7)$$

where *Comment Letter* is an indicator variable equal to 1 for the first letter sent by the SEC in each comment letter conversation, 0 otherwise. We use the same control variables as in Equation (1). The coefficient of *Founder CEO*,  $\beta$ , indicates the relation between the z score of the comment letter and founder CEOs. Like other tables, we report the marginal effects for this estimation in the tabulated results.

Table 10 reports the regression results of estimating alternative specification of Equation (7). Note that the number of observations differ across columns because of different fixed effects. The marginal probability for *Founder CEO* is statistically significant; one of them at the 0.05 level and two of them at the 0.10 level. These results indicate that founder-CEO firms attract SEC comment letters. In terms of economic significance, our results show that founder-CEO firms are 2% more likely to receive an SEC comment letter related to their 10K filings, which translates to a 7.4% increase in the probability of comment-letter issuance relative to that of an average firm. These results suggest that the Division of Corporation Finance shares a common regulatory preference in issuing comment letters to founder-CEO firms, even though we generally do not find founder-CEO firms to exhibit higher information opacity than other firms.

**[Insert Table 10 Here]**

#### **4. Conclusions**

Due to its limited resources, the SEC cannot investigate all firms and consequently has to choose its enforcement actions. However, the selective nature reduces the SEC's ability to detect all fraudulent activities (Kubic 2021). Once the SEC misses out on detecting a severe fraud, capital

markets and investors can suffer catastrophic consequences, such as those after the Theranos scandal and Madoff's Ponzi scheme. Meanwhile, the SEC enforcement division's investigation is an important screening step that has implications for statistical selection and the SEC's enforcement programs, such as AAER actions. Given the importance of the investigation and the identification of factors that can alter SEC actions, this paper examines the SEC investigations initiated against founder-CEO firms and the role founder-CEO characteristics play in these investigations.

We focus on founder CEOs because they possess a unique status in managing firms. Schumpeter (1942) notes that "...The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates...." Founders and founder CEOs provide such a fundamental impulse to the economy. Because founder CEOs shape firm policies, they can have a significant effect on firm profitability and investment (Adams et al. 2009; Fahlenbrach 2009; Villalonga and Amit 2006).

Our results indicate that the founder CEOs attract 0.8% more SEC investigations, which is equivalent to an 18% increase compared to an average firm's SEC investigation probability. We confirm that this relation is causal through two identification strategies. We implement two IV probit regressions using the CEO's founding experience prior to the current firm and the number of founders as instruments, one at a time. We also implement a stacked DID regression with exogenous founder-CEO turnover, defined as founder's turnover due to death or illness (Adams et al. 2009; Gentry et al. 2021). Both strategies confirm our main results. Because limited resources deteriorate the SEC's ability to detect fraud (e.g., Bonsall et al. 2021; Donelson et al. 2022), our

finding that the SEC investigates founder-CEO firms more frequently when choosing enforcement targets suggests the SEC will miss out on other firms as potential targets.

We also investigate the channel through which founder CEOs attract SEC investigation. We show that founder CEOs are associated with less discretionary accruals, lower stock return volatility, and higher return on assets relative to other firms. Most importantly, the presence of a founder CEO in a firm does not induce more AAERs or restatements, signifying that based on these two metrics, founder-CEO firms exhibit financial reporting quality similar to that of non-founder-CEO firms. Moreover, founder-CEO firms exhibit a lower likelihood of being sued especially by shareholders. Thus, information opacity or litigation risk facing founder-CEO firms do not appear to be a reason for the higher likelihood of SEC investigations against founder-CEO firms.

Instead, our results suggest that the investigation is driven by CEO characteristics. CEO power, overconfidence, and risk-taking are all important channels that can interact with the founder CEOs' effect on the SEC investigation. Additionally, using the CEO-level Google Search index to proxy for public attention, we show that the public attention on founder CEOs is another channel that leads SEC investigations to founder-CEO firms. Our results with comment letters issued by the Division of Corporation Finance echo our finding that founder CEOs attract more SEC investigations. Overall, our findings highlight the screening aspect of SEC investigations as opposed to the general perception of a punitive aspect of SEC investigations because of its close relation with SEC enforcement.

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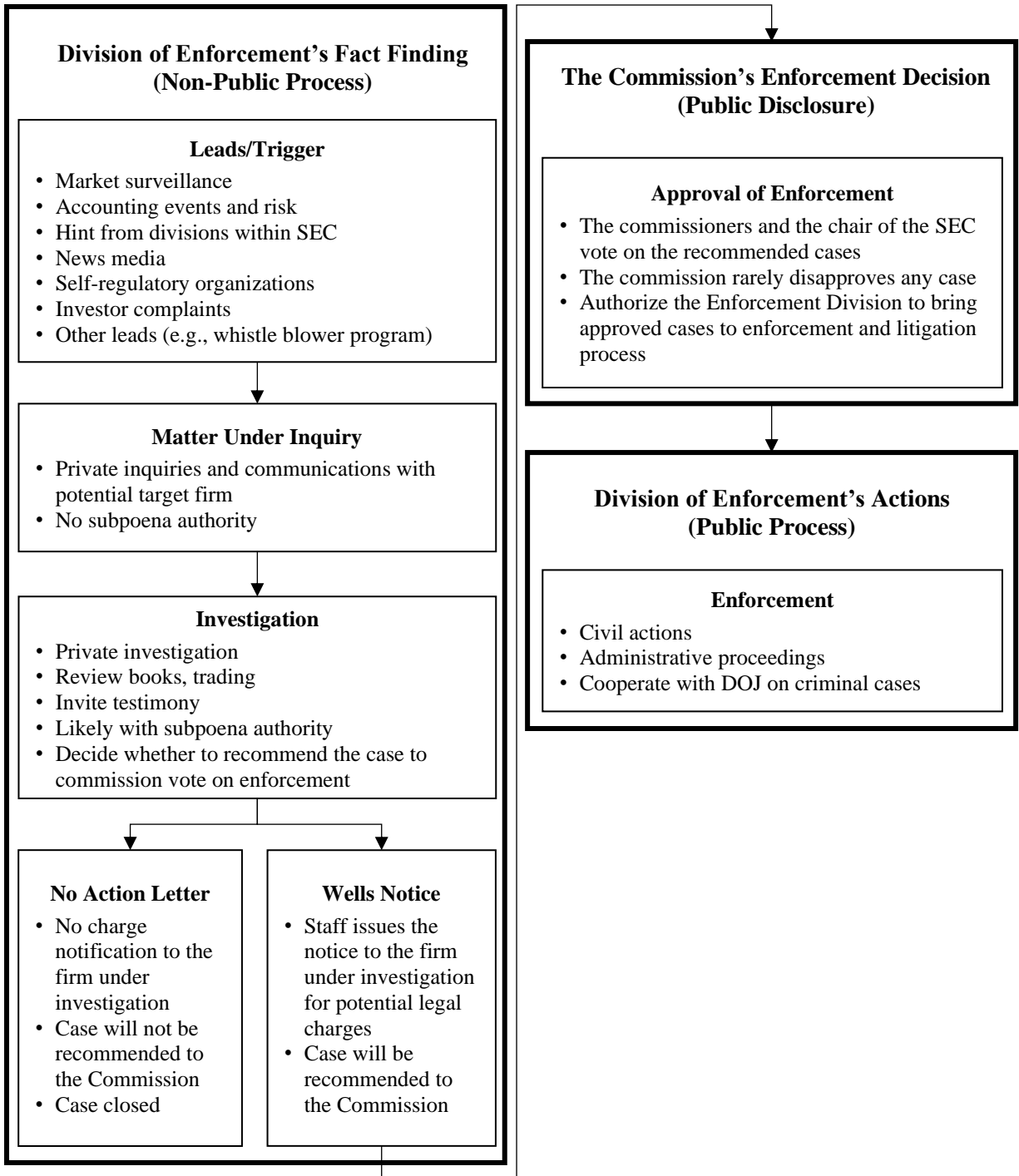


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**Figure 1** SEC investigation and enforcement process

This figure is created based on the SEC's webpage, Blackburne et al. (2020), Holzman et al. (2023), Karpoff et al. (2017), SEC Enforcement Manual (2017). Commission vote results can be found on the SEC's website: <https://www.sec.gov/about/commission-votes>.

**Table 1 Summary Statistics**

This table reports the summary statistics of selected variables for the full sample and the average treated effect (ATE) based on the two propensity score–matched (PSM) samples. Panel A reports the descriptive statistics for the dependent, test, and control variables used to estimate Equation (1), and Panel B reports the descriptive statistics for variables used in the additional analyses. Panel C reports the t-statistic to test for whether the founder CEOs' ATEs on the likelihood of an SEC investigation are significantly different than zero. PSM samples are formed based on the Mahalanobis distance matching method with or without replacement using all control variables in panel A and Equation (1). Variable definitions are in Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

<b>Panel A: Summary Statistics of Main Modeling Variables</b>						
Variable	N	Mean	Std Dev	25th Pctl	Median	75th Pctl
Dependent and Test Variables						
<i>SEC Investigation</i>	26751	0.044	0.20	0.00	0.00	0.00
<i>Founder CEO</i>	26751	0.31	0.46	0.00	0.00	1.00
Governance and Board Related Variables						
<i>Delaware Incorporation</i>	26751	0.64	0.48	0.00	1.00	1.00
<i>Family Firm</i>	26751	0.19	0.39	0.00	0.00	0.00
<i>Fortune 500</i>	26751	0.19	0.39	0.00	0.00	0.00
<i>Percent of Independent Directors</i>	26751	0.65	0.17	0.57	0.70	0.78
Fundamental Firm Related Variables						
<i>Annualized Volatility</i>	26751	0.44	0.23	0.28	0.38	0.53
<i>Cash Holding</i>	26751	0.16	0.18	0.03	0.09	0.24
<i>Leverage</i>	26751	0.20	0.19	0.02	0.17	0.30
<i>Ln (# Product Segment)</i>	26751	1.06	0.93	0.00	1.10	1.79
<i>Ln (Firm Age)</i>	26751	3.08	0.71	2.56	3.09	3.71
<i>Ln (Lobby Spending)</i>	26751	0.28	1.82	0.00	0.00	0.00
<i>Ln (Sales)</i>	26751	7.30	1.63	6.21	7.21	8.36
<i>Market Model Alpha</i>	26751	0.10	0.68	-0.20	0.01	0.25
<i>Tobin's Q</i>	26751	2.02	1.69	1.16	1.55	2.27
Financial Statement Related Variable						
<i>Income-reducing Restatement</i>	26751	0.09	0.28	0.00	0.00	0.00
SEC Related Variables						
<i>Ln (SEC Distance)</i>	26751	4.31	1.67	3.20	4.94	5.64
<i>SEC Investigation (t-1)</i>	26751	0.04	0.20	0.00	0.00	0.00

<b>Panel B: Summary Statistics of Additional Variables</b>						
Variable	N	Mean	Std Dev	25th Pctl	Median	75th Pctl
<i>10K Comment Letter</i>	26751	0.27	0.44	0.00	0.00	1.00
<i>AAER Enforcement</i>	26751	0.01	0.12	0.00	0.00	0.00
<i>CEO Overconfidence</i>	26751	2.29	1.43	1.00	1.00	4.00
<i>CEO Power</i>	26751	0.38	0.12	0.31	0.38	0.45
<i>Discretionary Accrual</i>	26751	0.06	0.08	0.02	0.04	0.07
<i>Environmental Litigation</i>	23487	0.06	0.23	0.00	0.00	0.00
<i>Google Search Index</i>	26751	28.99	96.78	0.00	0.00	0.00
<i>Large Restatement</i>	2913	0.50	0.50	0.00	0.00	1.00
<i>Litigation</i>	23487	0.22	0.41	0.00	0.00	0.00
<i>Number of Founders</i>	26751	0.19	0.74	0.00	0.00	0.00
<i>Past Founding Experience</i>	26751	0.02	0.13	0.00	0.00	0.00
<i>Patent Approval</i>	26751	29.24	188.27	0.00	0.00	5.00
<i>Patent Citation</i>	26751	445.42	2948.99	0.00	0.00	56.00
<i>Patent Value</i>	26751	1063.09	6727.62	0.00	0.00	59.53
<i>Revenue Restatement</i>	2913	0.24	0.43	0.00	0.00	0.00
<i>Shareholder Litigation</i>	23487	0.13	0.33	0.00	0.00	0.00

<b>Panel C: Propensity Score Match</b>		
	Without Replacement	With Replacement
<i>SEC Investigation (Founder CEO)</i>	0.05	0.05
<i>SEC Investigation (Non-Founder CEO)</i>	0.04	0.04
<i>Average Treatment Effect on Treated (Founder Minus Non-Founder)</i>	0.01	0.01
<i>Standard Errors</i>	0.00	0.00
<i>T-stat</i>	2.27**	1.79*

**Table 2 SEC Investigations and Founder CEOs**

This table reports the average marginal effects of probit regressions. The dependent variable is a dummy variable that takes the value 1 if a firm is under SEC investigation, 0 otherwise. The coefficients are directly interpretable as percentage influence on the likelihood of an SEC investigation. Robust standard errors clustered at the firm level are reported in parentheses. Columns (1)–(3) report the results based on the full sample, and columns (4) and (5) report the results based on the propensity score-matched (PSM) samples with and without replacement, respectively. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	SEC Investigation				
	Full Sample			PSM Matched Samples	
	(1)	(2)	(3)	Without Replacement (4)	With Replacement (5)
<i>Founder CEO</i>	0.008** (0.003)	0.008** (0.003)	0.008** (0.003)	0.010** (0.004)	0.013*** (0.004)
<i>Family Firm</i>	-0.000 (0.004)	-0.001 (0.004)	-0.001 (0.004)	0.005 (0.007)	-0.002 (0.005)
<i>Percent of Independent Directors</i>	-0.009 (0.010)	-0.007 (0.010)	-0.004 (0.010)	-0.029** (0.015)	-0.012 (0.019)
<i>Delaware Incorporation</i>	0.001 (0.003)	-0.000 (0.003)	-0.002 (0.003)	-0.014*** (0.006)	-0.015*** (0.005)
<i>Fortune 500</i>	0.001 (0.004)	0.003 (0.004)	0.003 (0.004)	0.009 (0.008)	0.007 (0.009)
<i>Annualized Volatility</i>	0.068*** (0.007)	0.073*** (0.007)	0.074*** (0.007)	0.045*** (0.012)	0.037*** (0.014)
<i>Cash Holding</i>	0.055*** (0.009)	0.044*** (0.009)	0.036*** (0.009)	0.013 (0.014)	0.008 (0.017)
<i>Leverage</i>	0.001 (0.007)	-0.002 (0.008)	-0.002 (0.008)	-0.004 (0.012)	0.012 (0.013)
<i>Ln (# Product Segment)</i>	0.007*** (0.002)	0.004*** (0.002)	0.004** (0.002)	0.007** (0.003)	0.008*** (0.003)
<i>Ln (Firm Age)</i>	-0.003 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.005 (0.004)	-0.007 (0.005)
<i>Ln (Lobby Spending)</i>	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.002 (0.001)	0.003** (0.001)
<i>Ln (Sales)</i>	0.015*** (0.001)	0.016*** (0.001)	0.016*** (0.001)	0.015*** (0.002)	0.015*** (0.002)
<i>Market Model Alpha</i>	-0.017*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)	0.002 (0.003)	0.000 (0.004)
<i>Tobin's Q</i>	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.002* (0.001)
<i>Income-reducing Restatement</i>	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)	0.028*** (0.006)	0.030*** (0.007)
<i>Ln (SEC Distance)</i>	-0.002*** (0.001)	-0.002** (0.001)	-0.001 (0.001)	-0.001 (0.002)	0.002 (0.002)
<i>SEC Investigation (t-1)</i>	0.015** (0.006)	0.009 (0.005)	0.006 (0.005)	0.017** (0.008)	0.017** (0.007)
Constant	Y	Y	Y	Y	Y
N	26,751	26,551	26,235	10,184	12,682
Pseudo R-squared	0.1001	0.1129	0.1186	0.115	0.128
SEC Chairman FE	N	N	Y	Y	Y
SEC Director FE	N	N	Y	Y	Y
Year FE	N	Y	Y	Y	Y
Industry FE	N	Y	Y	Y	Y
Error Cluster	Firm	Firm	Firm	Firm	Firm

**Table 3 Identification of Causal Relation: SEC Investigations and Founder CEOs**

This table reports the results from two identification strategies. Panel A reports the results from two separate two-step instrumental variable (IV) probit regressions using CEOs' past experience of founding a firm before the existence of the current firm and the number of founders as the IVs, one at a time. Panel B reports the ordinary least square estimation results from the stacked difference-in-difference design using the exogenous turnover (i.e., departure due to death or illness) of founder CEOs as the treatment. Focusing on the founder-CEO firms, the stacked DID design adopts a 6-year stacked window with the treatment occurring in year 4, and years 4–6 defined as the post-treatment years. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

<b>Panel A: Instrumental Variable Probit Regression</b>				
Dependent Variable	IV= Past Founder Experience		IV= # Founders	
	Step 1	Step 2	Step 1	Step 2
	Founder CEO	SEC Investigation	Founder CEO	SEC Investigation
<b>Founder CEO</b>		1.562** (0.756)		0.813*** (0.221)
<i>Past Founder Experience</i>	0.091** (0.041)			
<i>Number of Founders</i>			0.078*** (0.009)	
<i>Family Firm</i>	0.460*** (0.018)	-0.695* (0.362)	0.449*** (0.018)	-0.346*** (0.110)
<i>Board Independence</i>	-0.288*** (0.041)	0.383 (0.257)	-0.278*** (0.040)	0.156 (0.134)
<i>Delaware Incorporation</i>	-0.045*** (0.017)	0.050 (0.054)	-0.044*** (0.017)	0.014 (0.039)
<i>Fortune 500</i>	-0.071*** (0.022)	0.129* (0.069)	-0.058*** (0.021)	0.081 (0.054)
<i>Annual Volatility</i>	-0.068** (0.026)	0.821*** (0.145)	-0.079*** (0.026)	0.889*** (0.076)
<i>Cash Holdings</i>	0.022 (0.045)	0.319** (0.158)	0.007 (0.044)	0.395*** (0.113)
<i>Leverage</i>	-0.101*** (0.032)	0.132 (0.122)	-0.098*** (0.031)	0.054 (0.093)
<i>Ln (# Product Segments)</i>	0.003 (0.007)	0.035 (0.022)	0.002 (0.007)	0.043** (0.019)
<i>Ln (Firm Age)</i>	-0.159*** (0.012)	0.227* (0.128)	-0.153*** (0.012)	0.105** (0.047)
<i>Ln (Lobby Spending)</i>	-0.006** (0.003)	0.015 (0.009)	-0.006* (0.003)	0.011 (0.008)
<i>Ln (Sales)</i>	-0.012* (0.006)	0.180*** (0.033)	-0.018*** (0.006)	0.196*** (0.017)
<i>Market Adjusted Return</i>	-0.008** (0.004)	-0.149*** (0.056)	-0.007* (0.004)	-0.184*** (0.037)
<i>Tobin's Q</i>	0.001 (0.004)	0.022** (0.011)	-0.001 (0.004)	0.026*** (0.009)
<i>Income-reducing Restatement</i>	0.006 (0.017)	0.164** (0.067)	0.009 (0.016)	0.200*** (0.046)
<i>Ln (SEC Distance)</i>	0.014*** (0.005)	-0.032** (0.015)	0.013*** (0.005)	-0.024** (0.012)
<i>SEC Investigation (t-1)</i>	0.027* (0.014)	0.019 (0.067)	0.021 (0.013)	0.048 (0.063)
Constant	Y	Y	Y	Y
N	26,235	26,235	26,235	26,235
Wald Chi Squared	1412.09	1732.29	639.20	1195.58
SEC Chairman FE	Y	Y	Y	Y
SEC Director FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Error Cluster	Firm	Firm	Firm	Firm



**Table 3 (Continued)**

Dependent Variable	Panel B: Stacked Difference-In-Difference Regression			
	SEC Investigation			
<i>Treatment X Post</i>	-0.147** (0.050)	-0.146*** (0.050)	-0.149*** (0.051)	-0.149*** (0.051)
<i>Treatment (Exogenous Turnover)</i>	0.114** (0.044)	0.114*** (0.044)	0.119*** (0.046)	0.119*** (0.045)
<i>Post (Post Exogenous Turnover)</i>	0.004** (0.002)	0.002 (0.002)	0.004* (0.002)	0.002 (0.002)
<i>Family Firm</i>	0.002 (0.006)	0.003 (0.006)	-0.000 (0.006)	0.001 (0.006)
<i>Board Independence</i>	-0.006 (0.019)	-0.008 (0.020)	-0.010 (0.019)	-0.012 (0.019)
<i>Delaware Incorporation</i>	0.004 (0.006)	0.003 (0.006)	-0.001 (0.006)	-0.001 (0.006)
<i>Fortune 500</i>	-0.012 (0.013)	-0.013 (0.013)	-0.007 (0.013)	-0.009 (0.013)
<i>Annual Volatility</i>	0.059*** (0.014)	0.098*** (0.017)	0.057*** (0.014)	0.098*** (0.017)
<i>Cash Holdings</i>	0.063*** (0.019)	0.059*** (0.019)	0.050*** (0.019)	0.048** (0.019)
<i>Leverage</i>	-0.013 (0.015)	-0.013 (0.015)	-0.019 (0.017)	-0.020 (0.017)
<i>Ln (# Product Segments)</i>	0.009*** (0.003)	0.010*** (0.003)	0.009*** (0.003)	0.009*** (0.003)
<i>Ln (Firm Age)</i>	-0.008 (0.005)	-0.006 (0.005)	-0.012** (0.006)	-0.011* (0.006)
<i>Ln (Lobby Spending)</i>	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<i>Ln (Sales)</i>	0.021*** (0.003)	0.023*** (0.003)	0.024*** (0.004)	0.026*** (0.004)
<i>Market Adjusted Return</i>	-0.015*** (0.004)	-0.014*** (0.004)	-0.014*** (0.004)	-0.013*** (0.004)
<i>Tobin's Q</i>	0.003* (0.002)	0.003* (0.002)	0.002 (0.002)	0.002 (0.002)
<i>Income-reducing Restatement</i>	0.015 (0.010)	0.012 (0.009)	0.016 (0.010)	0.013 (0.010)
<i>Ln (SEC Distance)</i>	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)
<i>SEC Investigation (t-1)</i>	0.001 (0.015)	0.000 (0.015)	-0.012 (0.015)	-0.012 (0.015)
Constant	Y	Y	Y	Y
Observations	29,145	29,145	29,145	29,145
Adj R-squared	0.036	0.043	0.046	0.053
SEC Chairman FE	Y	Y	Y	Y
SEC Director FE	Y	Y	Y	Y
Year FE	N	N	Y	Y
Industry FE	N	Y	N	Y
Error Cluster	Firm	Firm	Firm	Firm

**Table 4 Power Channel and Overconfidence Channel**

The table reports the channel test results of CEO power and CEO overconfidence. The tests use CEO's relational pay pattern with the top executive team (pay slice) as a proxy for the CEO power channel and quartile rank ranging from 1 to 4, based on the ratio of in-the-money *unexercised* call options in the CEO's compensation package, as a proxy for CEO overconfidence. The coefficients are average marginal effects from probit regressions. The dependent variable is a dummy variable that takes the value 1 if a firm is under the SEC's investigation, 0 otherwise. The coefficients are directly interpretable as percentage influence on the investigation. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	SEC Investigation			
	(1)	(2)	(3)	(4)
<b>Founder CEO X Power</b>		0.047** (0.021)		
<i>Power</i>	-0.019* (0.011)	-0.038*** (0.013)		
<b>Founder CEO X Overconfidence</b>				0.004** (0.002)
<i>Overconfidence</i>			-0.001 (0.001)	-0.002* (0.001)
<i>Founder CEO</i>	0.008** (0.003)	-0.010 (0.008)	0.008** (0.003)	-0.001 (0.006)
<i>Family Firm</i>	-0.001 (0.004)	-0.001 (0.004)	-0.001 (0.004)	-0.001 (0.004)
<i>Board Independence</i>	-0.002 (0.010)	-0.002 (0.010)	-0.004 (0.010)	-0.005 (0.010)
<i>Delaware Incorporation</i>	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.002 (0.003)
<i>Fortune 500</i>	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)
<i>Annual Volatility</i>	0.073*** (0.007)	0.072*** (0.007)	0.073*** (0.007)	0.073*** (0.007)
<i>Cash Holdings</i>	0.036*** (0.009)	0.036*** (0.009)	0.036*** (0.009)	0.036*** (0.009)
<i>Leverage</i>	-0.002 (0.008)	-0.002 (0.008)	-0.002 (0.008)	-0.002 (0.008)
<i>Ln (# Product Segments)</i>	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)
<i>Ln (Firm Age)</i>	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)
<i>Ln (Lobby Spending)</i>	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<i>Ln (Sales)</i>	0.016*** (0.001)	0.016*** (0.001)	0.016*** (0.001)	0.016*** (0.001)
<i>Market Adjusted Return</i>	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)
<i>Tobin's Q</i>	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
<i>Income-reducing Restatement</i>	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)
<i>Ln (SEC Distance)</i>	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<i>SEC Investigation (t-1)</i>	0.006 (0.005)	0.005 (0.005)	0.006 (0.005)	0.006 (0.005)
Constant	Y	Y	Y	Y
N	26,235	26,235	26,235	26,235
Pseudo R-squared	0.119	0.120	0.119	0.119
SEC Chairman FE	Y	Y	Y	Y
SEC Director FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Error Cluster	Firm	Firm	Firm	Firm

**Table 5 Risk-Taking Channel Proxied by Patents**

This table reports the channel test results of the risk-taking channel. Risk-taking is proxied using several patent-related variables, including number of approved patents, the summation of the two-day dollar market cap appreciation to patent approvals (patent value), and the number of forward-looking citations on existing patents. The coefficients are the average marginal effects from the probit models. The dependent variable is a dummy variable that takes the value 1 if a firm is under SEC investigation. The coefficients are directly interpretable as percentage influence on the investigation. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	SEC Investigation					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Founder CEO X Patents</b>		0.003** (0.002)				
<i>Patents</i>	0.004*** (0.001)	0.004*** (0.001)				
<b>Founder CEO X Patent Value</b>				0.002*** (0.001)		
<i>Patent Value</i>			0.003*** (0.001)	0.003*** (0.001)		
<b>Founder CEO X Citations</b>						0.002** (0.001)
<i>Citation</i>					0.003*** (0.001)	0.002*** (0.001)
<i>Founder CEO</i>	0.008*** (0.003)	0.004 (0.004)	0.008*** (0.003)	0.003 (0.004)	0.008*** (0.003)	0.003 (0.004)
<i>Family Firm</i>	-0.001 (0.004)	-0.001 (0.004)	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)
<i>Board Independence</i>	-0.006 (0.010)	-0.007 (0.010)	-0.007 (0.010)	-0.008 (0.010)	-0.007 (0.010)	-0.008 (0.010)
<i>Delaware Incorporation</i>	-0.001 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.001 (0.003)	-0.002 (0.003)
<i>Fortune 500</i>	0.002 (0.004)	0.003 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.003 (0.004)
<i>Annual Volatility</i>	0.073*** (0.007)	0.073*** (0.007)	0.072*** (0.007)	0.072*** (0.007)	0.072*** (0.007)	0.072*** (0.007)
<i>Cash Holdings</i>	0.030*** (0.009)	0.029*** (0.009)	0.029*** (0.009)	0.028*** (0.009)	0.030*** (0.009)	0.028*** (0.009)
<i>Leverage</i>	-0.000 (0.008)	-0.001 (0.008)	0.001 (0.007)	0.000 (0.007)	-0.000 (0.008)	-0.001 (0.008)
<i>Ln (# Product Segments)</i>	0.004** (0.002)	0.004** (0.002)	0.003** (0.002)	0.003** (0.002)	0.003** (0.002)	0.003** (0.002)
<i>Ln (Firm Age)</i>	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)
<i>Ln (Lobby Spending)</i>	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<i>Ln (Sales)</i>	0.014*** (0.001)	0.014*** (0.001)	0.013*** (0.001)	0.013*** (0.001)	0.014*** (0.001)	0.014*** (0.001)
<i>Market Adjusted Return</i>	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)	-0.016*** (0.003)
<i>Tobin's Q</i>	0.002*** (0.001)	0.002*** (0.001)	0.002** (0.001)	0.002* (0.001)	0.002** (0.001)	0.002** (0.001)
<i>Income-reducing Restatement</i>	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)	0.018*** (0.004)
<i>Ln (SEC Distance)</i>	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<i>SEC Investigation (t-1)</i>	0.005 (0.005)	0.005 (0.005)	0.004 (0.005)	0.004 (0.005)	0.005 (0.005)	0.005 (0.005)
Constant	Y	Y	Y	Y	Y	Y
N	26,235	26,235	26,235	26,235	26,235	26,235
Pseudo R-squared	0.121	0.121	0.122	0.123	0.121	0.122
SEC Chairman FE	Y	Y	Y	Y	Y	Y
SEC Director FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Error Cluster	Firm	Firm	Firm	Firm	Firm	Firm

**Table 6 CEO Visibility Channel**

This table reports the channel test results of CEO visibility based on CEO-level Google Search index from 2004 to 2016. The time coverage of the sample is shortened because of the availability of Google Search data. CEO Visibility is the raw value of the CEO-level Google Search index and Shock to CEO Visibility is the residual from the Autoregressive one (AR1) model using monthly values of the Google search index over the fiscal year. The coefficients are the average marginal effects from the probit models. The dependent variable is a dummy variable that takes the value 1 if a firm is under SEC investigation, 0 otherwise. The coefficients are directly interpretable as percentage influence on the investigation. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	SEC Investigation			
	(1)	(2)	(3)	(4)
<b>Founder CEO X CEO Visibility</b>		0.004*** (0.001)		
<i>CEO Google Search Index</i>	0.000 (0.001)	-0.000 (0.000)		
<b>Founder CEO X Shock to CEO Visibility</b>				0.004** (0.002)
<i>Ln (CEO Google Search Index)</i>			-0.001 (0.001)	-0.002* (0.001)
<i>Founder CEO</i>	0.006** (0.003)	0.005* (0.003)	0.008** (0.003)	0.007** (0.003)
<i>Ln (# Analyst)</i>	0.011*** (0.002)	0.012*** (0.002)	0.012*** (0.003)	0.012*** (0.003)
<i>Family Firm</i>	0.000 (0.003)	0.000 (0.003)	-0.001 (0.004)	-0.001 (0.004)
<i>Board Independence</i>	-0.009 (0.009)	-0.008 (0.009)	-0.006 (0.010)	-0.006 (0.010)
<i>Delaware Incorporation</i>	-0.000 (0.003)	-0.000 (0.003)	-0.002 (0.003)	-0.002 (0.003)
<i>Fortune 500</i>	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)
<i>Annual Volatility</i>	0.062*** (0.006)	0.062*** (0.006)	0.074*** (0.007)	0.074*** (0.007)
<i>Cash Holdings</i>	0.024*** (0.008)	0.023*** (0.008)	0.030*** (0.010)	0.030*** (0.010)
<i>Leverage</i>	-0.001 (0.007)	-0.001 (0.007)	-0.002 (0.008)	-0.002 (0.008)
<i>Ln (# Product Segments)</i>	0.003** (0.001)	0.003** (0.001)	0.004** (0.002)	0.004** (0.002)
<i>Ln (Firm Age)</i>	0.001 (0.002)	0.001 (0.002)	0.001 (0.003)	0.001 (0.003)
<i>Ln (Lobby Spending)</i>	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<i>Ln (Sales)</i>	0.010*** (0.001)	0.010*** (0.001)	0.013*** (0.002)	0.013*** (0.002)
<i>Market Adjusted Return</i>	-0.014*** (0.003)	-0.014*** (0.003)	-0.015*** (0.003)	-0.015*** (0.003)
<i>Tobin's Q</i>	0.001 (0.001)	0.001 (0.001)	0.002* (0.001)	0.002* (0.001)
<i>Income-reducing Restatement</i>	0.014*** (0.003)	0.014*** (0.003)	0.018*** (0.004)	0.018*** (0.004)
<i>Ln (SEC Distance)</i>	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<i>SEC Investigation (t-1)</i>	0.082*** (0.004)	0.082*** (0.004)	0.005 (0.005)	0.006 (0.005)
Constant	Y	Y	Y	Y
N	26,235	26,235	26,235	26,235
Pseudo R-squared	0.177	0.178	0.121	0.122
SEC Chairman FE	Y	Y	Y	Y
SEC Director FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Error Cluster	Firm	Firm	Firm	Firm

**Table 7 Information Opacity and Founder-CEO Firms**

This table reports the regression results using three proxies for information opacity as dependent variables: absolute value of discretionary accrual, income-reducing restatement dummy, and AAER action dummy. The dummy variables take a value 1 if the associated firm event happens, 0 otherwise. For discretionary accrual, the results are linear regression coefficients. For the other two other variables, the results are average marginal effects from probit models. The coefficients are directly interpretable as marginal effects on discretionary accrual and the probability of dummy variable events. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

	(1)	(2)	(5)
Dependent Variable	Discretionary Accrual	Income-reducing Restatement	AAER
<i>Founder CEO</i>	-0.003** (0.001)	0.003 (0.009)	0.005 (0.004)
<i>Family Firm</i>	-0.000 (0.002)	0.006 (0.010)	0.000 (0.005)
<i>Board Independence</i>	-0.011*** (0.004)	-0.033 (0.024)	-0.005 (0.011)
<i>Delaware Incorporation</i>	0.002 (0.001)	0.018** (0.008)	0.004 (0.003)
<i>Fortune 500</i>	0.002 (0.002)	-0.027*** (0.010)	0.001 (0.005)
<i>Annual Volatility</i>	0.084*** (0.006)	0.093*** (0.017)	0.002 (0.006)
<i>Cash Holdings</i>	0.007 (0.006)	-0.043* (0.025)	0.011 (0.012)
<i>Leverage</i>	0.003 (0.004)	-0.024 (0.017)	0.007 (0.006)
<i>Ln (# Product Segments)</i>	0.000 (0.001)	-0.002 (0.004)	0.002 (0.002)
<i>Ln (Firm Age)</i>	-0.001 (0.001)	-0.006 (0.006)	-0.002 (0.002)
<i>Ln (Lobby Spending)</i>	0.000 (0.000)	0.001 (0.002)	0.000 (0.001)
<i>Ln (Sales)</i>	-0.003*** (0.001)	0.002 (0.003)	0.004** (0.002)
<i>Market Adjusted Return</i>	-0.000 (0.002)	-0.001 (0.003)	-0.001 (0.001)
<i>Tobin's Q</i>	0.003*** (0.001)	-0.002 (0.002)	0.001 (0.001)
<i>Income-reducing Restatement</i>	0.002 (0.002)		0.095*** (0.011)
<i>Ln (SEC Distance)</i>	0.000 (0.000)	-0.001 (0.002)	0.000 (0.001)
<i>SEC Investigation (t-1)</i>			0.003 (0.004)
Constant	Y	Y	Y
N	26,751	26,751	26,751
Adj/Pseudo R-squared	0.133	0.044	0.078
SEC Chairman FE	N	N	Y
SEC Director FE	N	N	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Error Cluster	Firm	Firm	Firm

**Table 8 Stock Return Volatility, Operating Performance, and Founder CEO Firms**

This table reports the regression results from ordinary least square estimation for two dependent variables: fiscal-year stock return volatility and return on assets. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in Appendix Table 1A. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

<i>Dependent Variable</i>	(1) <i>Annual Volatility</i>	(2) <i>ROA</i>
<b>Founder CEO</b>	-0.012** (0.005)	0.008** (0.003)
<i>Family Firm</i>	-0.002 (0.005)	-0.003 (0.003)
<i>Board Independence</i>	-0.070*** (0.014)	0.020* (0.011)
<i>Delaware Incorporation</i>	0.005 (0.005)	-0.007** (0.003)
<i>Fortune 500</i>	0.044*** (0.006)	-0.034*** (0.007)
<i>Annual Volatility</i>		-0.292*** (0.019)
<i>Cash Holdings</i>	0.112*** (0.015)	0.006 (0.017)
<i>Leverage</i>	0.098*** (0.015)	-0.132*** (0.042)
<i>Ln (# Product Segments)</i>	-0.002 (0.002)	-0.001 (0.001)
<i>Ln (Firm Age)</i>	-0.037*** (0.004)	-0.013*** (0.004)
<i>Ln (Lobby Spending)</i>	-0.000 (0.001)	0.000 (0.000)
<i>Ln (Sales)</i>	-0.042*** (0.002)	0.017*** (0.004)
<i>Market Adjusted Return</i>	0.022*** (0.005)	0.029*** (0.004)
<i>Tobin's Q</i>	-0.008*** (0.002)	0.010** (0.005)
<i>Income-reducing Restatement</i>	0.031*** (0.006)	-0.002 (0.004)
<i>Ln (SEC Distance)</i>	-0.001 (0.002)	0.002** (0.001)
<i>SEC Investigation (t-1)</i>	0.039*** (0.006)	-0.002 (0.005)
Constant	Y	Y
N	26,751	26,751
Adj R-squared	0.484	0.215
SEC Chairman FE	Y	Y
SEC Director FE	Y	Y
Year FE	Y	Y
Industry FE	Y	Y
Error Cluster	Firm	Firm

**Table 9 Litigation Risk and Founder CEO Firms**

This table reports the results from the tests on firm's litigation risk attributable to founder-CEO presence. We report the results of the overall litigation risk reduction and the shareholder litigation risk reduction due to founder CEOs. The dependent variables below are dummy variables. Each dependent variable takes the value 1 if a firm is involved in a specific type of litigation, 0 otherwise. The coefficients are the average marginal effects from the probit models and are directly interpretable as percentage influence on the litigation risk. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	(1) All Litigation	(2) Shareholder
<b>Founder CEO</b>	-0.115** (0.052)	-0.107* (0.059)
<i>Family Firm</i>	0.046 (0.054)	0.085 (0.062)
<i>Percent of Independent Directors</i>	0.464*** (0.140)	0.144 (0.148)
<i>Delaware Incorporation</i>	0.063 (0.051)	0.062 (0.052)
<i>Fortune 500</i>	0.200*** (0.070)	0.114 (0.074)
<i>Annualized Volatility</i>	1.093*** (0.094)	1.513*** (0.096)
<i>Cash Holding</i>	0.801*** (0.136)	0.930*** (0.138)
<i>Leverage</i>	-0.002 (0.105)	0.033 (0.107)
<i>Ln (# Product Segment)</i>	0.071*** (0.024)	0.069*** (0.025)
<i>Ln (Firm Age)</i>	0.012 (0.040)	-0.098** (0.040)
<i>Ln (Lobby Spending)</i>	0.009 (0.009)	0.008 (0.011)
<i>Ln (Sales)</i>	0.277*** (0.022)	0.220*** (0.022)
<i>Market Adjusted Return</i>	-0.079*** (0.018)	-0.092*** (0.019)
<i>Tobin's Q</i>	-0.010 (0.015)	-0.027 (0.017)
<i>Income-reducing Restatement</i>	0.183*** (0.054)	0.228*** (0.057)
<i>Ln (SEC Distance)</i>	-0.016 (0.014)	-0.003 (0.014)
<i>SEC Investigation (t-1)</i>	0.496*** (0.044)	0.628*** (0.045)
Constant	Y	Y
N	23,487	23,192
Adj/Pseudo R-squared	0.163	0.157
SEC Chairman FE	N	N
SEC Director FE	N	N
Year FE	Y	Y
Industry FE	Y	Y
Error Cluster	Firm	Firm

**Table 10 Division of Corporation Finance's 10K Comment Letter Issuance and Founder-CEO firms**

This table reports the regression results relating founder-CEO firms to the Division of Corporation Finance's issuance of 10K filing-related comment letters. The dependent variable is a dummy variable that takes the value 1 if a firm receives a comment letter about its 10K filing, 0 otherwise. The coefficients are the average marginal effects from the probit models and are directly interpretable as percentage influence on the comment letter issuance. Robust standard errors clustered at the firm level are reported in parentheses. Variable definitions are in the Appendix Table A1. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level (two-tailed), respectively.

Dependent Variable	10K Comment Letter		
	(1)	(2)	(3)
<b>Founder CEO</b>	0.028** (0.011)	0.019* (0.011)	0.018* (0.011)
<i>Family Firm</i>	0.001 (0.013)	0.015 (0.012)	0.015 (0.012)
<i>Board Independence</i>	0.042 (0.038)	0.002 (0.038)	-0.002 (0.038)
<i>Delaware Incorporation</i>	0.006 (0.009)	0.009 (0.009)	0.009 (0.010)
<i>Fortune 500</i>	0.019 (0.015)	0.012 (0.015)	0.007 (0.015)
<i>Annual Volatility</i>	0.144*** (0.019)	-0.029 (0.024)	-0.019 (0.024)
<i>Cash Holdings</i>	0.063** (0.029)	0.037 (0.031)	0.050 (0.031)
<i>Leverage</i>	0.038* (0.020)	0.079*** (0.023)	0.077*** (0.023)
<i>Ln (# Product Segments)</i>	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)
<i>Ln (Firm Age)</i>	-0.011 (0.008)	-0.013 (0.008)	-0.014* (0.008)
<i>Ln (Lobby Spending)</i>	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)
<i>Ln (Sales)</i>	0.052*** (0.004)	0.052*** (0.004)	0.053*** (0.004)
<i>Market Adjusted Return</i>	-0.004 (0.007)	-0.009 (0.007)	-0.009 (0.007)
<i>Tobin's Q</i>	0.002 (0.004)	0.010*** (0.004)	0.010*** (0.004)
<i>Income-reducing Restatement</i>	0.022 (0.016)	0.023 (0.016)	0.026 (0.016)
<i>Ln (SEC Distance)</i>	-0.005** (0.003)	-0.005* (0.003)	-0.002 (0.003)
<i>SEC Investigation (t-1)</i>	-0.056*** (0.009)	-0.081*** (0.009)	-0.082*** (0.009)
Constant	Y	Y	Y
N	16,899	16,894	16,894
Pseudo R-squared	0.022	0.049	0.051
SEC Chairman FE	N	N	Y
SEC Director FE	N	N	Y
Year FE	N	Y	Y
Industry FE	N	Y	Y
Error Cluster	Firm	Firm	Firm



## Appendix

**Table 1A**

The table below describes the main variable definitions we use in this paper, including their possible values and calculations.

Variables	Description	Variable Value and Calculation
<i>10K Comment Letter</i>	This variable is the SEC comment letter record from Audit Analytics. The SEC publicizes the comment letter records since 2005.	1 if the firm-year is associated with a comment letter related to 10K form, 0 otherwise.
<i>AAER</i>	This variable is the SEC AAER obtained from University of South California (see Dechow et al. 2011).	1 if the firm-year is in the SEC's accounting and auditing enforcement records, 0 otherwise.
<i>All Litigation</i>	This variable is a dummy variable summarizing all types of litigation from Audit Analytics database.	1 if the firm-year is associated with any of the following types of litigation: shareholder, environmental, civil rights, regulatory, labor, intellectual property, and illegal activities, 0 otherwise.
<i>Annual Volatility</i>	This variable is the stock return volatility aggregated to the fiscal year calculated with CRSP database.	Aggregated 12-month return volatility at the fiscal year level.
<i>Board Independence</i>	This variable is the board independence measure estimated with RiskMetrics database.	Percentage of independent board directors calculated as the number of independent directors divided by the total number of directors.
<i>Cash Holdings</i>	This variable is the cash holding amount estimated with Compustat database.	Ratio between cash holding (Compustat item che) and total assets (Compustat item at).
<i>CEO Visibility</i>	This variable is the Google Search index at the CEO level as the proxy for CEO visibility.	CEO-level Google Search index proxies CEO visibility and is from Google Search Engine based on CEO names.
<i>Delaware Incorporation</i>	This variable is a dummy of whether a firm is incorporated in Delaware.	1 if the firm is incorporated in the state of Delaware, 0 otherwise.
<i>Discretionary Accrual</i>	This variable is the discretionary accruals estimated using the modified Jones method (see Dechow et al. 1995).	The calculation is detailed in Table 2A.
<i>Exogenous Turnover</i>	This variable is the dummy of CEO turnover due to death or illness (see Gentry et al. 2020).	1 if the CEO departs due to death or illness, 0 otherwise.
<i>Family Firm</i>	This variable is the hand-collected family member information that verifies a firm as family firm (see Andrerapn and Reebok 2003).	1 if founder family members own more than 5% of the shares, 0 otherwise.
<i>Founder CEO</i>	This variable is the hand-collected founder CEO status information.	1 if the CEO of the firm is also a founder of the firm, 0 otherwise.
<i>Fortune 500</i>	This variable is a dummy of whether a firm is a Fortune 500 firm from the Compustat database.	1 if the firm is a Fortune 500 company, 0 otherwise.
<i>Income-reducing Restatement</i>	This variable is a dummy of restatements with negative changes on earnings from Audit Analytics.	1 if the fiscal period is associated with an income-reducing restatement, 0 otherwise.
<i>Leverage</i>	This variable is the leverage level estimated with Compustat database.	Ratio of long-term debt (Compustat item ltd) to total assets (Compustat item at).
<i>Ln (Distinct Analyst)</i>	This variable is the number of distinct analysts who follow the firm from the I/B/E/S database.	Log of the number of equity research analysts covering the firm.
<i>Ln (Firm Age)</i>	This variable is the number of years since a firm appeared in the Compustat database.	Log of firm age in years.
<i>Ln (Lobby Spending)</i>	This variable is the dollar value of investment in lobbying from the OpenSecret website.	Log of the sum of lobbying expenditures
<i>Ln (Product Segments)</i>	This variable is the number of product segments as a control of accounting complexity from the Compustat database.	Log of number of product segments
<i>Ln (Sales)</i>	This variable is the sales volume as a size control variable from Compustat database.	Log of sales

**Table A1 (Continued)**

Variables	Description	Variable Value and Calculation
<i>Ln (SEC Distance)</i>	This variable is the distance between the firm headquarter in Compustat database and the SEC office of the jurisdiction.	The distance between a firm headquarter and the SEC regional office is defined as the great-circle distance using latitudes and longitudes based on the 5-digit zip code information. Specifically, the distance is calculated as $3949.99 \times \arccos \left[ \begin{array}{c} \sin \left( \frac{\arctan(1)}{45} \times \text{firm latitude} \right) \times \\ \sin \left( \frac{\arctan(1)}{45} \times \text{SEC latitude} \right) \\ + \\ \cos \left( \frac{\arctan(1)}{45} \times \text{firm latitude} \right) \times \\ \cos \left( \frac{\arctan(1)}{45} \times \text{SEC latitude} \right) \times \\ \cos \left( \frac{\arctan(1)}{45} \times \text{firm longitude} - \right. \\ \left. \frac{\arctan(1)}{45} \times \text{SEC longitude} \right) \end{array} \right]$ and the log scale is applied to the distance calculation.
<i>Market Adjusted Return</i>	This variable is the market-adjusted return for the fiscal year.	Difference between fiscal period holding return and the CRSP value-weight market holding return calculated using CRSP database.
<i>Number of Founders</i>	This variable is the hand-collected number of founders upon the establishment of a firm.	Total number of founders in the establishment year.
<i>Overconfidence</i>	This variable is the CEO overconfidence in the firm prospectus, estimated with the ExecuComp database (see Malmendier and Tate 2005).	Quartile rank variable of unexercised in-the-money call options in CEO's total compensation (option-in-compensation ratio) with a value between 1 and 4, with higher ranks indicating more CEO overconfidence.
<i>Past Founding Experience</i>	This variable is the hand-collected information on whether a CEO has founding experience before becoming the CEO of their current firm.	1 if the CEO founded a firm before the existence of the current firm, 0 otherwise.
<i>Patents</i>	This variable is the number of approved patents (see Kogan et al. 2017).	Number of approved patents.
<i>Patent Citations</i>	This variable is the number of patent citations (see Hall et al. 2005).	Sum of one plus each patent's citation in each year, scaled by its forward-looking citations, to adjust for citation truncation lags.
<i>Patent Value</i>	This variable is a dollar-based market value proxy of the approved patents (see Kogan et al. 2017).	The sum of abnormal stock return in a [0,+2] window around a patent's approval, multiplied by the shares outstanding one day before the approval.
<i>Power</i>	This variable is the CEO's pay slice out of the top five executives (see Bebchuk et al. 2011).	CEO total compensation divided by the total compensation of the rest of the top five executives.
<i>ROA</i>	This variable is the ratio of return on assets.	Operating income before depreciation (Compustat item oibdp) scaled by total assets (Compustat item at).
<i>SEC Investigation</i>	This variable is the SEC undisclosed investigation record obtained through Freedom of Information Act (FOIA) request.	1 if the firm-year is under the SEC's undisclosed investigation, 0 otherwise.
<i>Shareholder Litigation</i>	This variable is a dummy variable of shareholder litigation from Audit Analytics database.	1 if the firm-year is associated with a shareholder lawsuit, 0 otherwise.
<i>Shock to CEO Visibility</i>	This variable is based on the Google Search index at the CEO level.	The residual from the fiscal-year autoregressive model of the Google Search Index, i.e., residual from AR(1) of the index, which is interpreted as the sudden change in the CEO visibility.
<i>Tobin's Q</i>	This variable is Tobin's Q, estimated with the Compustat database.	Tobin's Q from the last fiscal year is calculated as $Q = \frac{\text{Total Assets} + \text{Market Equity} - \text{Book Equity}}{\text{Total Assets}}$ , where book equity is the shareholders' equity (Compustat item seq) adjusted with deferred taxes (Compustat item txdb) and preferred shares, and market equity is the fiscal year end stock price (Compustat item prcc_f) multiplied by outstanding common shares (Compustat item csho).

### Table 2A Discretionary Accrual Calculation

This table details the calculation of discretionary accrual in this paper using the Compustat database following the Jones model as modified by Dechow et al. (1995).

Step 1 Data Preparation	<p>The discretionary accrual is calculated following the modified Jones model. To obtain robust estimation of the average two-digit SIC code-level discretionary accrual, three types of firms are excluded from the estimation process:</p> <ol style="list-style-type: none"> <li>1. Firms with total assets and lag 1 total asset smaller than 1 million USD,</li> <li>2. Firms associated with a 2-digit SIC code of less than ten fiscal year observations in the Compustat database, and</li> <li>3. Firms with missing values in total assets, lag 1 total assets, sales, lag 1 sales, income, operating net cash flow, and plant, property, and equipment.</li> </ol>
Step 2 Raw Input Preparation	$\%Total\ Accrual_t = \frac{Total\ Income_t - Operating\ Net\ Cash\ Flow_t}{Total\ Assets_{t-1}}$ $Revenue\ Growth_t = Sales_t - Sales_{t-1}$ $Receivable\ Change_t = Total\ Receivable_t - Total\ Receivable_{t-1}$ $\%Sales_t = \frac{Revenue\ Growth_t - Receivable\ Change_t}{Total\ Assets_{t-1}}$ $\%Property\ Plant\ and\ Equipment_t = \frac{Property\ Plant\ and\ Equipment_t}{Total\ Asset_{t-1}}$
Step 3 Missing Value Substitution in %Total Accruals	<p>If total accrual calculation in step 2 is not viable,</p> $\%Total\ Accrual_t = [(Total\ Current\ Assets_t - Total\ Current\ Assets_{t-1}) - (Total\ Current\ Liability_t - Total\ Current\ Liability_{t-1}) + (Debt\ in\ Current\ Liability_t - Debt\ in\ Current\ Liability_{t-1}) - Depreciation_t] / Total\ Assets_t$
Step 4 Winsorization	<p>To ensure the robustness of the industry-year benchmark, the input variables are Winsorized in fiscal-year groups at the 1% and 99% levels.</p>
Step 5 Calculation	<p>For each two-digit SIC code and fiscal year combination, we conduct the following regression:</p> $\%Total\ Accrual_{it} = \beta_0 + \beta_1 \%Sales_{it} + \beta_2 \frac{1}{Total\ Assets_{it-1}} + \beta_3 \%Property\ Plant\ and\ Equipment_t + Discretionary\ Accrual_{it}$ <p>where the residual term <i>Discretionary Accrual<sub>it</sub></i> is taken as the discretionary accrual for firm <i>i</i> in fiscal year <i>t</i>. In the empirical analysis, the absolute value is adopted to focus the analysis only on the magnitude of the discretionary accrual without consideration of the direction.</p>