Wearing Out the Watchdog: The Impact of SEC Case Backlog on the Formal Investigation Process

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ABSTRACT

We examine a comprehensive set of investigations by SEC Division of Enforcement offices to provide evidence on the consequences of busyness on the formal investigation process. Our evidence suggests that higher office case backlog decreases the likelihood of investigation initiation. Consistent with the SEC's commitment to its stated priorities, our results show no evidence that higher backlog affects the SEC's ability to pursue cases with revenue recognition concerns and high insider trading. Surprisingly and inconsistent with SEC priorities, our findings indicate that busy SEC offices are less likely to pursue cases with the largest shareholder losses — likely because large-loss cases take longer to close. Backlog also appears to impact pursued investigations, leading to longer investigations, a lower AAER likelihood, and smaller SEC or DOJ penalties. Our final analyses provide modest small sample evidence that uninvestigated firms exhibit lower earnings quality and returns in future periods. Collectively, our evidence suggests that busyness impacts the investigation process, ranging from case priorities to sanctions and penalties assessed.

Keywords: SEC enforcement, investigations, misreporting, financial misconduct

JEL classification: G18, G38, K42, M41

We are grateful for helpful comments and discussions on this manuscript from Farzana Afrin (discussant), Daniel Beneish, Matt Ege, Jennifer Glenn, Katherine Gunny, John Robinson, Joseph Schroeder, Anish Sharma, Christopher Small (discussant), Jennifer Tucker, and several anonymous SEC Division of Enforcement employees as well as workshop participants at the 2020 Financial Accounting and Reporting Section Mid-Year Meeting, the 2020 Hawaiian Accounting Research Conference, Clemson University, Florida Atlantic University, Maastricht University, the Ohio State University, the University of Amsterdam, the University of Arkansas, the University of Cincinnati, the University of Florida, the University of Houston, the University of North Carolina-Charlotte, the University of Oregon, and the University of Tennessee. Brian Miller gratefully acknowledges financial support from the Sam Frumer Professorship. We also thank the SEC's Division of Enforcement for providing the investigation data used in this study.

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We examine a comprehensive set of investigations by SEC Division of Enforcement offices to provide evidence on the consequences of busyness on the formal investigation process. Our evidence suggests that higher office case backlog decreases the likelihood of investigation initiation. Consistent with the SEC's commitment to its stated priorities, our results show no evidence that higher backlog affects the SEC's ability to pursue cases with revenue recognition concerns and high insider trading. Surprisingly and inconsistent with SEC priorities, our findings indicate that busy SEC offices are less likely to pursue cases with the largest shareholder losses — likely because large-loss cases take longer to close. Backlog also appears to impact pursued investigations, leading to longer investigations, a lower AAER likelihood, and smaller SEC or DOJ penalties. Our final analyses provide modest small sample evidence that uninvestigated firms exhibit lower earnings quality and returns in future periods. Collectively, our evidence suggests that busyness impacts the investigation process, ranging from case priorities to sanctions and penalties assessed.

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1. Introduction

Effective regulatory monitoring has long been a staple of efficient and well-functioning capital markets. To provide market confidence and corporate reporting transparency, the Securities and Exchange Commission's (SEC's) Division of Enforcement routinely engages in formal investigations of financial wrongdoing. Despite the importance of such investigations, in recent years the number of SEC enforcement actions has seen a significant decline, which has led to questions about the SEC's effectiveness (Cornerstone 2017). While several potential explanations exist for the recent decline in enforcement actions, SEC officials have often pointed to being too busy to effectively investigate and prosecute all potential misconduct (Peikin 2019).

In this study, we examine the impact of busyness on the Division of Enforcement's formal investigation process. In particular, we focus on four broad lines of inquiry: (1) the effect of open case backlog on the overall likelihood of SEC investigations; (2) how backlog affects the SEC's priorities for case selection and resource allocation; (3) the effect of backlog on a comprehensive set of outcomes for firms that are investigated by the SEC following a restatement; and (4) a comparison of future financial reporting and performance outcomes between firms that are not investigated in periods of high backlog and firms that are investigated in periods of low backlog.

Historically, observing the consequences of SEC workload has been challenging because the SEC has long elected to conduct investigations confidentially to protect evidence and reputations. Since an investigated firm is also under no mandate to disclose the investigation, identifying workload stemming from case backlog has previously been nearly impossible. We overcome this obstacle by using a newly available dataset from Blackburne et al. (2020) that identifies the subjects of formal SEC investigations, along with the investigations' open and

close dates.[1] This dataset allows us to use case open and close dates to measure the stock of outstanding investigations being pursued by an SEC office at a given point in time—what we refer to as case backlog.

We begin by examining the impact of existing regional office case backlog on the likelihood of investigation initiation.[2] Following prior research (Kedia and Rajgopal 2011; Files 2012; Correia 2014), we use restatements as trigger events because restatements are likely to draw the SEC's attention. We find that a high existing regional office case backlog reduces the SEC's likelihood of initiating an investigation into a misreporting firm after a restatement.

Next, we examine how backlog affects the SEC's priorities for case selection and resource allocation. In particular, we investigate areas that the SEC has publicly stated are high priorities: revenue recognition, insider trading, and large shareholder losses/investor harm. Consistent with the SEC prioritizing certain cases regardless of busyness, our results show no evidence that backlog constrains the opening of an investigation into a restating firm when the restatement involves a revenue recognition issue or when top executives have engaged in a high degree of insider selling during the misreported periods. In contrast, we find that backlog impedes the SEC from investigating misreporting cases that result in the most significant shareholder harm. Further analysis reveals that investigations into such cases take longer to close and, thereby, are especially costly for the SEC to conduct during periods of high backlog. Collectively, these

[1] Historically, researchers could observe SEC investigations only if a firm chose to disclose that it is under investigation, but merely looking at the disclosed investigations gives at best a partial picture. Blackburne et al. (2020) use FOIA requests to obtain both disclosed and undisclosed SEC investigations and show that less than 20 percent of targeted firms initially disclose they are under investigation.

[2] Our conversations with Enforcement Division agents confirm that geography is one of the most important factors in determining which office initiates an investigation. Similarly, geography is identified in the SEC's Enforcement Manual (2017) as a major factor that determines case assignment to an office. In our data, when an investigation is opened after a restatement, 72 percent of the time the case originates out of the regional office that has geographic nexus over the firm's corporate headquarters. Figure 1 provides an illustration of each regional office's geographic nexus.

findings suggest that busyness potentially inhibits the SEC from minimizing and deterring activities that lead to the most significant investor harm. We also examine whether a factor discussed in prior research—political connections—affects the SEC's case prioritization during periods of high backlog. Interestingly, busy SEC offices are less likely to investigate those restating firms that have recently lobbied the U.S. government, a result suggesting that agency busyness may complement the utility of political lobbying for misreporting firms and executives.

Next, we examine how backlog affects investigation outcomes. We find that higher office backlog is associated with lengthier investigations and a lower likelihood of an enforcement action. The lengthening of investigations associated with office busyness appears counter to the SEC's recently publicly stated goal of conducting accounting-related investigations more quickly (SEC 2019). Further, the negative effect of backlog on enforcement actions is significant given the high-profile nature of these public enforcement releases and their unique deterrent value.

For the subset of investigated firms ultimately subject to enforcement actions, we find that higher office backlog during the investigation is associated with lower penalty amounts and a lower incidence of required governance changes. These results suggest that SEC busyness constrains the SEC's ability to punish and correct misreporting firms. We also find that during periods of high office case backlog, the SEC and other regulatory agencies increase cooperation, which the SEC has identified as a priority. Because busyness reduces overall monetary penalties and enforcement actions, however, it is unclear whether this incremental increase in cooperation during periods of higher backlog offsets the reduced SEC enforcement.

Given tension about whether public and private enforcement are substitutes or complements, we examine whether higher case backlog at the SEC influences private enforcement. It is plausible that the SEC may reduce its investigative efforts and instead rely on private

enforcement to fill in the gaps created by its capacity constraints. To examine this possibility, we perform mediation analysis to understand the strategic interaction between public and private enforcement in the context of the SEC's busyness. We find that SEC office case backlog reduces the likelihood of an SEC enforcement action, which *indirectly* reduces the likelihood of a class action lawsuit being filed. This finding is consistent with theory suggesting that public enforcement complements private enforcement (Schantl and Wagenhofer 2020). Overall, these results help to illuminate the potential negative consequences of workload constraints on public enforcement efforts.

Lastly, we examine a subsample of material restatements which the SEC investigates during periods of low backlog and restatements which the SEC does not investigate during periods of high backlog. We provide modest evidence that the uninvestigated firms during the high backlog periods have lower financial reporting quality and worse future performance in subsequent periods. Further, using a difference-in-differences research design, we find that investors rely less on the uninvestigated firms' earnings releases than on the investigated firms' earnings releases. Collectively, these findings suggest that backlog hinders the SEC from curtailing possible continued misreporting and, thus, erodes the usefulness of financial reporting to investors.

Understanding the effectiveness of the SEC's formal investigation process is vital because the SEC provides a major restraint on corporate misreporting, which has been shown to undermine investor trust in markets (Giannetti and Wang 2016; Dupont and Karpoff 2020). Our study builds on prior work by Ege, Glenn, and Robinson (2020) and Gunny and Hermis (2020). Consistent with the SEC's Division of Corporation Finance making tradeoffs in its comment letter process, findings from these studies show that the SEC issues lower quality comment

letters when transactional filing or periodic filing volumes are greater,. Nonetheless, it is important to understand how busyness matters in the enforcement setting, especially given comments from prior SEC chairpersons indicating that enforcement activity has the greatest potential for deterrence as enforcement actions are highly publicized.[3] Hence, although regulators and politicians may be willing to allow busyness to affect less visible comment letter issues, it is unclear from a political risk perspective whether they want busyness to affect more visible misreporting cases that attract significant media attention.

Perhaps more importantly, there are fundamental differences in both the structure and the ramifications of the investigation process relative to those of the comment letter process. In terms of structure, each division within the SEC operates like a separate entity with different budgets, objectives, and outputs (e.g., comment letters vs. investigations and litigation). While the Division of Corporation Finance seeks to ensure that investors are provided with material information to make informed investment decisions, the Division of Enforcement is tasked with conducting investigations into possible violations of the federal securities laws and litigating the SEC's civil enforcement proceedings in federal courts and administrative proceedings. Further, the ramifications of investigations are far more severe than those of comment letters. Prior literature shows that only three percent of comment letters ultimately result in a restatement (Cassell, Dreher, and Myers 2013). In contrast, in our sample, 22 percent of investigations result in much more severe Accounting and Auditing Enforcement Releases (AAERs). In addition, while comment letters rarely trigger additional punitive actions such as class action lawsuits, SEC AAERs commonly trigger additional adverse consequences for firms and managers through

[3] For example, see Chair Mary Jo White's Speech to the NYU School of Law Program (https://www.sec.gov/news/speech/chair-white-speech-new-york-university-111816.html).

related incremental private litigation.[4] Hence, investigations are much more likely to have significant consequences for investors, firms, and managers.

Finally, we extend our analysis of the consequences of busyness in the formal investigation setting beyond that in the Ege et al. (2020) study by examining important factors that moderate the impact of workload constraints (e.g., revenue recognition restatements, insider selling during the misstatement period, the size of shareholder losses, and firms' prior lobbying activity). Concerning the Gunny and Hermis (2020) study, which finds that the SEC focuses on the more severe cases of non-compliance, our evidence suggests that in the investigation process the SEC Division of Enforcement appears to instead focus on less severe cases at least for restatement cases. We believe this is a material difference in how the Division of Enforcement responds to busyness compared to the Division of Corporation Finance.

Combined, our findings suggest that workload significantly affects the SEC's ability to formally scrutinize potential corporate misconduct. Misstatements with the most shareholder harm are more likely to go uninvestigated when regional offices are busier. Further, workload appears to affect enforcement outcomes: when there is higher investigation backlog, firms are less likely to receive an enforcement action and, if they do receive an enforcement action, the penalties are less severe. Finally, we provide some modest evidence that case backlog leads to adverse consequences in that uninvestigated restating firms experience lower earnings quality, worse future stock returns, and lower earnings responses. We believe that these findings provide evidence that can inform those with funding and oversight authority over the SEC's enforcement arm about the negative impacts of busyness on the SEC's ability to investigate, punish, and deter corporate wrongdoers.

[4] For example, we find that 29percent the AAER-receiving firms in our sample are subject to subsequent class action filings per the Stanford class action database.

2. The SEC investigation process and research question

2.1 The SEC investigation process

Securities laws in the United States charge the SEC with the responsibility for policing corporate malfeasance. An important part of this charge is the investigative process, which operates through the SEC's Division of Enforcement and can lead to recommendations for civil actions against individuals and firms in federal court or before an administrative law judge for violations of U.S. securities laws. After recommending civil actions to the commission, Division of Enforcement personnel can also prosecute these cases on behalf of the SEC.[5]

Over the past decade, enforcement officials have contended that resource constraints have prevented them from effectively investigating and prosecuting all those committing securities-related misconduct (Thomsen 2009). Budgetary constraints were brought to the forefront in 2012, when the SEC budget was not increased even though its responsibilities were vastly expanded under the Dodd-Frank Wall Street Reform and Consumer Protection Act (Stewart 2011). When regulatory budgets are not expanded with workload, the tradeoff between types of investigations becomes greater. As discussed in Kedia and Rajgopal (2011), the SEC views longer distance travel for its investigative staff as a significant cost, a finding suggesting that investigations of firms farther from SEC regional offices are costlier to perform.

Another potential way that workload constraints impedes the securities enforcement process is through fluctuations in workload. When SEC enforcement offices have more outstanding work, their staff will likely be bounded in their ability to take on additional cases—even if there is new potential misconduct that would otherwise meet the threshold for investigation. Blackburne (2014) finds that firms appear to respond to the Division of Corporation Finance's budgetary constraints—higher budget allocations are associated with firms having lower

[5] See Holzman et al. (2021) and Karpoff et al. (2008a) for illustrated timelines of the investigation process.

discretionary accruals and a lower likelihood of financial restatements.

Recent studies by Ege et al. (2020) and Gunny and Hermis (2020) show that the SEC's Division of Corporation Finance makes tradeoffs in its comment letter process as greater transactional filing or periodic filing volumes can lead to lower quality comment letters. As discussed above, the Division of Enforcement is a distinct organization with different budget constraints and objectives. Perhaps more importantly, the severity of the outcomes from the investigation process has greater consequences in terms of resulting AAERs and corresponding related private litigation. Therefore, we believe it is important to examine how case backlog affects the SEC Division of Enforcement's formal investigation process.

2.2 Research questions

2.2.1 Impact of Case Backlog on Case Selection and Resource Allocation

Our study first examines whether busyness reduces the likelihood of formal investigation initiation and whether the characteristics of firms and their potential misconduct moderate this reduction. To do so, we measure busyness using the case backlog at each Enforcement Division regional office. Because SEC enforcement offices are unlikely to be able to quickly expand and contract their investigative staff in response to variation in enforcement activities, we expect that when SEC offices face greater investigation case backlog, they face greater constraints on their ability to pursue an investigation because existing staff are closer to their peak capacity.[6]

However, *a priori* the impact of regional-office-level backlog is unclear. While the location of the firm, witnesses, or alleged wrongdoers is the primary indicator of how the SEC determines which regional office is responsible for policing a particular set of firms within a geographic nexus, it is possible that another regional office or even the national office could review the case.

[6] Consistent with the notion that the SEC has difficulty in expanding its staff, the Division of Enforcement was in a hiring freeze from 2016 to 2019 (Avakian 2018). Additionally, our recent conversations with Division of Enforcement employees confirmed that funding for incremental positions is especially rare.

Further, the SEC could also elect to re-allocate staff and resources from other offices when a particular office is overly burdened. This ability to shift resources would make regional office backlog irrelevant. Despite this tension, we predict that the SEC will be less likely to open a formal investigation into a firm when the regional office responsible for the investigation faces a greater case backlog. We posit that the effect of case backlog on the likelihood of a formal investigation is incremental to the geographic distance of the firm in question from the SEC regional office.

The second part of our initial line of inquiry is to examine how investigation case backlog affects the Division of Enforcement's resource allocation. In particular, we analyze three important priorities identified by the SEC: revenue recognition issues, insider trading, and magnitude of investor harm. Because revenue is typically the single largest item reported in a firm's financial statements, since the late 1990s the SEC has prioritized regulation, review, and enforcement on issues of revenue recognition (Turner 2001; SEC 2003; SEC 2013). In addition, the SEC has maintained a longstanding mission of litigating insider trading cases. Prior research has identified higher insider selling of shares by top corporate executives as a potential determinant of financial misreporting (Beneish 1999; Beneish and Vargus 2002; Agrawal and Cooper 2015). Lastly, the SEC identifies "the amount of potential or actual loss to investors" as an important consideration when deciding whether to open a formal investigation (SEC 2017, p. 15). If the SEC reallocates resources toward cases with characteristics related to these stated enforcement priorities, then we do not expect to observe a negative relation between case backlog and investigation opening.

Beyond stated enforcement priorities, we also examine whether lobbying interacts with workload constraints to deter investigation. Given findings from prior research suggesting that

political lobbying can benefit misreporting firms (Yu and Yu 2011; Correia 2014) by helping them avoid or delay detection or minimize penalties, we conjecture that firms' lobbying efforts can serve as an implicit case selection mechanism, whereby in the face of workload constraints the SEC is less likely to investigate firms that have engaged in governmental lobbying.

2.2.2 Impact of Case Backlog on the Investigation Process

Next, we investigate the impact of case backlog on the investigation process for restatement events that result in a formal investigation. A greater workload could influence the timeline of an investigation or extent to which investigators can find evidence to pursue an enforcement action. For instance, a busy SEC regional office may elect to investigate the most winnable cases, a decision which would lead to shorter investigations and a higher likelihood of enforcement actions. Alternatively, because investigators' capacities are stretched, investigated cases may take longer to close and become less likely to result in an enforcement action. We investigate both the length of investigations and their likelihood of leading to enforcement actions to understand the effect of workload constraints on investigations.

To the extent that workload constraints have a negative impact on public enforcement by the SEC, it is plausible that private enforcement through securities class action litigation can serve as a substitute and overcome the reduced effectiveness of the SEC's enforcement process. Alternatively, as shown by Schantl and Wagenhofer (2020), public enforcement may complement private enforcement because the evidence of misreporting presented by the public regulator facilitates class action plaintiffs' effort to build a complaint for a lawsuit. We examine how higher case backlog at the SEC influences private enforcement..

Lastly, we focus on a subset of firms that are both investigated and receive an SEC enforcement action and study whether investigation case backlog affects enforcement outcomes. To the extent that workload constraints reduce the quality of evidence acquired by the SEC, we

expect that penalties will be less severe for cases investigated during periods of higher case backlog.

2.2.3 Impact of Case Backlog for Uninvestigated Firms

In our final line of inquiry, we examine whether SEC regional office case backlog has ramifications for firms that are not investigated. As noted by Peikin (2019), "[e]very case we [the SEC] pursue comes with opportunity costs in terms of cases not pursued." On the one hand, when faced with the constraints of greater investigation case backlog, the SEC may trade off more minor cases in favor of more egregious cases of potential misconduct. Such decision making should lead to little or no harm for shareholders of the uninvestigated firms. On the other hand, if case backlog makes it difficult to make such a tradeoff in case selection, then we should observe a greater preponderance of negative consequences for restating firms that the SEC does not investigate when case backlog is higher. We examine whether future financial reporting and performance outcomes at uninvestigated restating firms are a function of SEC case backlog. Specifically, we examine future earnings quality, stock returns, and investor response to earnings releases. To the extent that case backlog prevents the SEC from uncovering incremental misconduct or negligent practices at restating firms and, thus, facilitates continued governance failures, we expect that relative to investigated firms from periods of lower case backlog, uninvestigated firms during periods of higher case backlog will experience lower future earnings quality, lower future stock returns, and a muted response to earnings by investors.

3. Data, Sample Selection, and Descriptive Statistics

3.1 SEC Investigation Data

The SEC has historically kept confidential whether it is investigating a particular firm before publicly announcing charges against a firm or its employees. This confidentiality protects the reputation of firms and officers when the SEC finds no evidence of wrongdoing. Accordingly,

detailed knowledge of the SEC's active investigation backlog is generally unobservable by external market participants. However, once the investigation process is completed, the SEC will confirm the beginning and ending dates of the investigation regardless of the outcome of the investigation. We obtain from Blackburne et al. (2020) such raw data including open and closing dates for all closed SEC investigations between January 1, 2000 and August 2, 2017.[7]

The SEC investigation data identify thousands of closed formal investigations during the covered period and provide case identification numbers, firm name or issue investigated, the opening date of the investigation, and the closing date of the investigation. The case identification number associated with each investigation begins with an office abbreviation. The abbreviations correspond with either the home office (i.e., Washington, D.C.) or one of the 11 regional offices located across the U.S. (e.g., Boston, Philadelphia, Miami, etc.). Figure 1 illustrates the assigned geographic nexus that each regional office is responsible for policing. Further, according to the SEC's Enforcement Manual, the assignment of a new investigation to an SEC office primarily involves consideration of the location of the firm, witnesses, or alleged wrongdoers (U.S. Securities and Exchange Commission 2017).

Geographic location of the firm does not singularly determine the office assignment, however. Additional considerations may include the resources and expertise of the office, and relationships between the new investigation and prior investigations. Additionally, the manual notes that when a regional office has insufficient resources to handle the investigation, it can refer the case to the home office. Consistent with the local office usually, but not always, handling investigations of firms headquartered in their geographic nexus, our findings show that 72 percent of the investigations opened after a restatement are opened by the SEC regional office

[7] Other studies using these data include: Coleman et al. (2020), Blackburne and Quinn (2020), Solomon and Soltes (2020), Blackburne et al. (2021), and Holzman et al. (2021).

that has geographic purview over a firm's headquarters location. Further, our conversations with enforcement staff also confirm that corporate geography is a critical factor in determining which office leads an investigation.

3.2 Sample Selection

We predict that conditional on a major trigger event, the filing of a financial restatement, regional office investigative case backlog reduces the likelihood of the SEC opening a formal investigation into a firm. Our choice of restatements as a triggering event is based on its plausibility as an event that would catch the SEC's attention and thus generate a high-powered setting to examine the influence of backlog on the formal investigation process. Based on our conversation with a former SEC staff member, all restatements are reviewed by the SEC. Given this assertion and evidence from concurrent research showing that restating firms have a higher likelihood of being subject to a formal investigation (Holzman et al. 2021) and an enforcement action (Karpoff et al. 2008b), we focus our study on a sample of restating firms.

Our sample selection begins at the intersection of Compustat, the Center for Research in Security Prices (CRSP), and Audit Analytics non-reliance restatement databases for the period of January 2000 to 2013, yielding 5,153 restatement observations.[8] We begin our sample selection in 2000 because the data provided by the SEC in response to the original FOIA request summarize all cases closed (not opened) starting in 2000, and thus create a relatively complete view of office-by-office backlog starting in 2000. Further, the FOIA response provides data on all closed investigation cases through August 2017. It is likely, however, that many cases opened in the last several years preceding 2017 have not yet been closed and, thus, are not included in

[8] Our sample of non-technical restatements from the Audit Analytics non-reliance restatement database excludes restatements solely due to the adoption of new accounting pronouncements or clarifications of existing pronouncements (SAB 108, new EITF guidance, etc.), as these types of restatements would not likely trigger an SEC investigation.

the dataset. Hence, any backlog calculated during these latter years may be misleading as it would not include the cases that have been opened but are not yet closed as of 2017. To address this concern, we calculate the average investigation length to be 3.75 years, and therefore eliminate the last four years of restatements such that our sample ends in 2013.[9]

Further, we remove 353 restatement observations for which an SEC investigation into the firm is opened in the year before the restatement filing date.[10] These observations are removed to avoid instances in which an SEC investigation was the cause, instead of the result, of a restatement. We then remove 35 restatement observations that were missing complete address data in the EDGAR header sections of firms' Form 10-K filings in the year immediately before the restatement announcement. Lastly, we remove 108 restatement observations from our sample due to missing Compustat data items needed to calculate control variables. This sample selection procedure yields a total sample size of 4,657 restatement observations filed by 2,943 unique firms.

3.3 Descriptive Statistics

Panel A of Table 1 presents descriptive statistics for our sample of firm restatement observations. We define a binary variable *investigation opened* that is set to one when a formal SEC investigation is opened within one year after the restatement, and zero otherwise. We also define a binary variable *investigation opened – fraud/disclosure* that is set to one when a formal SEC investigation with a primary classification in the SEC records of "financial fraud/issuer disclosure" is opened into the firm within one year after the restatement, and zero otherwise. We use a one-year window after a restatement to codify whether the SEC chooses to investigate a

[9] The median investigation length is approximately 2.5 years.
[10] In untabulated tests, we extend this window up to three years before the filing of a restatement and find that our results are qualitatively and quantitatively similar.

restatement. Based on voluntarily disclosed investigation data, Karpoff et al. (2017) find that the average length of time between a restatement and the opening of a formal investigation is approximately 2.67 months. Given the likelihood of some variation in the length of this window, however, in an abundance of caution we choose to use a one-year window. Panel A of Table 1 indicates that approximately 14.6 percent of firm restatements are subsequently followed by the initiation of a formal SEC investigation over the following year. In addition, the average SEC regional office formal investigation backlog (*sec ro backlog*) during this sample is approximately 226 cases. The average formal investigation backlog in the SEC home office (*sec hq backlog*) is approximately 764 cases. Additionally, the average firm headquarters is approximately 144 miles away from its assigned SEC regional office (*geo distance from ro*).

We include controls for several restatement characteristics ("restatement controls"). To control for differences in the severity of restatements, we include a binary variable indicating whether a restatement involves a revenue recognition issue (*revenue recognition*). Prior research suggests that restatements involving revenue recognition issues are more severe (Palmrose, Richardson, and Scholz 2004; Anderson and Yohn 2002) and that a material percentage of SEC enforcement actions involve revenue recognition issues (Dechow et al. 2011). Accordingly, we expect the SEC to be more likely to investigate restatements with a revenue recognition issue. Panel A of Table 1 indicates that 16.7 percent of restatements in our sample involve a revenue recognition issue.

Further, we control for the length of the period restated (*restated time period*) and the number of unique accounting rule application failure keys identified by Audit Analytics (*num issues*). We control for whether the firm's auditor was aware of the restatement filing (*auditor knows*). Given that a greater restatement announcement price drop and negative media coverage likely attract

greater SEC attention, we also control for the short-window market-adjusted buy-and-hold stock return centered on the restatement filing (*restatement return*) and the average tone of all media articles about the firm in the month after the restatement filing (*media tone*). Panel A of Table 1 indicates that the average firm in our sample restates over a year of financial information (717 days), that these restatements involve approximately two primary issues, and that the average short-window stock market reaction to the filing of these restatements is -1.7 percent.

Following Kedia and Rajgopal (2011), we include several controls to hold constant whether major firm characteristics are more or less likely to lead to an investigation ("firm controls"). These controls include firm size (*ln(mve)*), a small firm indicator (*small size*) for those firms with a market capitalization under $200 million, and a binary variable identifying inclusion in the S&P 500 (*sp500*).[11] Further, we follow Kedia and Rajgopal (2011) and control for the degree of firm leverage (*leverage*), the book-to-market ratio (*btm*), and a proxy for firm maturity (*firm age*).

The descriptive statistics indicate that the average firm's market capitalization is approximately $1,686 million, and that about 41 percent of the firm-quarter observations have a market capitalization less than $200 million. Further, about eight percent of the sample are members of the S&P 500 Index. The median firm uses a moderate amount of debt to finance its assets (*leverage*=0.195), has a market value approximately twice its book value (*btm*=0.544), and has been publicly traded for twelve years (*firm age*). We define all variables in Appendix A.

Finally, Panel B of Table 1 presents descriptive statistics of the monthly stock (monthly case backlog) and flow (monthly investigations opened) of investigations by office over our sample from 2000 to 2013. These statistics reveal substantial differences in the number of cases handled

[11] Kedia and Rajgopal (2011) proxy for firm size using all three of these variables to control for both linear (i.e., *ln(mve)*) and non-linear relationships (*small firm* and *sp500*).

by each office and significant variation in case backlog over time. The sum of the mean *monthly case backlog* indicates that the SEC has on average about 2,763 open formal investigations in each month and opens approximately 58 new cases each month.

4. Empirical Analyses

4.1 – Impact of Case Backlog on Case Selection and Resource Allocation

To examine whether case backlog constrains the SEC from investigating potential financial reporting misconduct, we develop a model to predict the likelihood of a new SEC investigation opening after the filing of a restatement. Specifically, we estimate the following equation using a linear probability model:

$$\begin{aligned} \textit{investigation opened} = {} & \alpha + \beta_1 \textit{sec ro backlog} + \beta_2 \textit{sec hq backlog} + \beta_3 \textit{geo distance from ro} \\ & + \text{restatement controls} + \text{firm controls} + \text{regional office-year fixed effects} \\ & + \text{industry fixed effects} + \varepsilon, \end{aligned} \quad (1),$$

where *investigation opened* is a binary variable equal to one when any SEC office opens a formal investigation into a restating firm within one year of the restatement filing, and zero otherwise.[12,13] The primary test variable of interest, *sec ro backlog*, is the number of open cases, as of the most recent month end, in the SEC regional office that has jurisdiction over the geographic area where the restating firm's headquarters is located.

Since it is possible that the national office steps in when the regional office is faced with a large amount of backlog, we control for whether the home office backlog, *sec hq backlog*, is associated with the likelihood of initiating an investigation into a firm. Additionally, following

[12] In untabulated robustness tests, we document consistent results when lengthening the window for setting *investigation opened* to one out to 24 months after the filing of a restatement. Combined, we interpret the results in Table 2 and these untabulated results to indicate that SEC regional office busyness reduces the likelihood of an investigation rather than merely delay the investigation.

[13] While our paper is focused on the formal investigation process, the SEC also conducts informal investigations that precede the formal investigation phase. We attempted to obtain records from the SEC on informal investigations through a FOIA request, however, the SEC response indicated that these records are not maintained. However, in untabulated analyses we examine whether a proxy for informal SEC investigatory activity is associated with regional office backlog. Specifically, we examine the number of SEC-initiated downloads of firm financial filings through EDGAR in the sixty days after a firm restatement. Our findings indicate a strong negative relationship between *sec ro backlog* and this proxy for informal investigation activity.

prior research (Kedia and Rajgopal 2011), we control for the geographic distance between a firm's headquarters and the SEC regional office with jurisdiction (*geo distance from ro*). We also include the restatement controls and firm controls previously discussed.

Importantly, we also include regional office-year fixed effects. The SEC's budgeting process for employees and technological resources occurs on an annual cycle, and budget allocations vary by regional office. We include these fixed effects to serve as a proxy for the level of resources to which a given office has access each year and to control for differences in office leadership. This is important because budget allocations will lead different regional offices to have different capabilities and efficiencies, which will factor into how many cases that office can handle at any given time. The inclusion of office-year fixed effects implies that any meaningful relationship between regional office backlog and the likelihood of an SEC investigation arises from intra office-year variation in case backlog. Examining variation within an office-year also mitigates concerns that regional offices are led by different individuals over time. In addition to these controls, we also include industry fixed effects (Fama and French [1997], 48 industries). We define all variables in Appendix A.

Table 2 reports the results from estimating Eq. (1). Column (1) presents the results of regressing *investigation opened* on *sec ro backlog* and fixed effects. The results indicate a negative relationship between the level of the pre-existing backlog in the SEC regional office with geographic charge over the firm's headquarters location and the opening of an investigation (*t-statistic*: -2.85). Column (2) adds the additional constraint controls and the restatement controls, and we continue to find a negative coefficient on *sec ro backlog* (t-statistic: -3.38). We do not find a significant association between national office backlog and the likelihood of opening an investigation (*t-statistic*: 1.46) or the distance from the local regional office (*t-*

statistic: 1.05).[14] Column (3) adds firm controls, and we continue to find a strong negative association between regional office backlog and the probability of the opening of an investigation (t-statistic: -3.78).[15,16]

While in the analyses in columns (1) through (3) we examine the opening of any SEC investigation into a firm in the year following a restatement, it is possible the SEC could open an investigation that is unrelated to the firm's restatement and therefore add noise to the estimates. For robustness, column (4) re-specifies Eq. (1) by changing the dependent variable to be set to one when the SEC opens a formal investigation in the following year that is classified as a "financial fraud/issuer disclosure" investigation. These SEC investigation types are more likely to be related to the firm's financial reporting and restatement. Consistent with the results in columns (1) – (3), the results in column (4) continue to indicate a strong negative association between *sec ro backlog* and formal investigation initiations (*t-statistic*: -3.26).[17]

Besides our variable of interest, several of the control variables also load in the anticipated direction. First, referring to column (3), the results indicate that restatement filings that involve a revenue recognition issue (*t-statistic*: 5.63) are more likely to trigger an SEC investigation. Similarly, as the number of restated periods increases, the likelihood that the SEC opens an investigation increases (*t-statistics*: 5.11). Additionally, auditor awareness or involvement in the

[14] We note that given the presence of regional office-year fixed effects in our design, we do not necessarily anticipate a strong association between geographic distances and investigation initiations. However, we control for it to ensure our measure of backlog is orthogonal to this factor examined in prior research (Kedia and Rajgopal 2011).

[15] In untabulated results, we disaggregate *sec ro backlog* into backlog stemming from accounting-related cases and all other cases. We find that the results are driven by accounting-related case backlog.

[16] To ensure our results are not driven by any one SEC regional office, we re-estimate our primary results after removing all restatements filed in a geographic region one-by-one. This results in re-estimating Eq. (1) eleven times on modified samples. The results of each of these tests (untabulated) indicate a strong negative relationship between *sec ro backlog* and investigation opened regardless of the region omitted from the sample (i.e., *t* statistics on *sec ro backlog* range from -3.15 to -4.16 in these tests) and coefficient estimates remain stable.

[17] In untabulated analyses, we examine an unconditioned sample of all firm-quarters during the period of 2000 – 2013, and find that the level of investigation backlog in the assigned regional office is negatively associated with the SEC's likelihood of opening an investigation into a firm in the ensuing quarter.

restatement is associated with a greater likelihood of investigation (*t-statistic*: 3.84). This is consistent with the SEC taking on cases with potentially more culpable parties to investigate. Further, the likelihood of the opening of an investigation is negatively associated with the short-window stock market reaction to the restatement announcement (*t-statistic*: -7.32) and the tone of firm media coverage after the restatement filing (*t-statistic*: -2.75). Lastly, we find that the likelihood of opening an investigation is positively associated with firm size (*t-statistic*: 3.69), *leverage* (*t-statistic*: 1.93), and *btm* (*t-statistic*: 1.80).[18]

In addition to examining the statistical significance of regional office backlog, we also believe our study can help to highlight the magnitude of the economic effect of busyness on investigation likelihood. Specifically, because Eq. (1) is designed to exploit within regional-office-year variation in case backlog, we calculate the standard deviation of *sec ro backlog* after de-meaning this variable by office-year to be approximately 19 cases. Accordingly, the coefficient estimated in column (3) of Table 3 suggests that a one-standard deviation increase in within regional office year backlog from the mean reduces the relative likelihood of the SEC investigating a restatement by 10.4 percent (i.e., [-0.0008 x 19] ÷ .146). To help put this magnitude in context, we find that a one-standard deviation increase in the *restatement return* reduces investigation likelihood by 38 percent. In contrast, the economic significance of a one standard-deviation increase in the subsequent firm *media tone* reduces the investigation likelihood by approximately five percent.

Next, we examine whether office backlog constrains the SEC from initiating investigations into its stated priorities of revenue recognition, insider trading, and investor harm. Additionally,

[18] To ensure that our results are not driven by the use of the linear probability model, we also re-estimate the analyses in Table 2 using a logistic regression model (untabulated). We document consistent results in that we find a negative and significant coefficient on *sec ro backlog* (*t-statistics*: -4.04; -3.01; -3.11; and -2.90).

we examine whether political lobbying potentially interacts with office busyness. To start, we partition our sample of restatements on those that involve revenue recognition and those that do not involve revenue recognition and then re-estimate Eq. (1) in each subsample. We tabulate the results of these analyses in Table 3.

Column (1) of Table 3 reports the results of estimating Eq. (1) on the subsample of restatement observations in our sample that involve revenue recognition. We do not find a statistically significant relationship between *sec ro backlog* and the opening of a formal investigation at conventional levels (*t-statistic*: 0.78). However, consistent with the findings in Table 2, the results in column (2) indicate a strong negative association between *sec ro backlog* and the opening of a formal investigation (*t-statistic*: -3.10) for those restatements not involving revenue recognition issues. Additionally, we test across this sample partition for a difference in coefficient magnitudes on *sec ro backlog* but do not find strong evidence of a statistically dependable difference (χ^2*-statistic*: 2.35, *p-val*=.13). Nonetheless, the results in column (1) of Table 3 are generally consistent with the notion that the SEC's Division of Enforcement prioritizes revenue recognition issues despite office level busyness.

Next, given the SEC's longstanding mission of litigating insider trading cases, we examine whether restatements accompanied by high insider selling during the misstated period are constrained from investigation by office busyness. Prior research has identified higher insider selling of shares by top corporate executives as a potential determinant of financial misreporting (e.g., Beneish 1999; Beneish and Vargus 2002; Agrawal and Cooper 2015). Accordingly, we collect data on the insider trading activity of top executives from Thomson Reuters during the misstated periods .[19] We create a measure of insider selling based on the total dollar value of

[19] We following prior research on insider trading (Beneish and Vargus 2002; Beneish et al. 2017) and identify top officers as those having the following titles: CEO, President, Chairman, CFO, COO, CIO, or CTO.

sales made by top executives scaled by the total dollar value of insider sales and purchases ("*insider sales ratio*"), where higher values are instances in which top executives sell a higher relative volume of shares.[20]

Table 4 reports the results from estimating Eq. (1) on two partitions of the sample based on insider trading activity during the restated periods. Column (1) of Table 4 reports the results for the top half of the sample (i.e., higher degree of insider selling) ranked on the *insider sales ratio*. We do not detect a statistically significant relationship between *sec ro backlog* and the initiation of a formal investigation when insider selling is higher during the restated period (*t-statistic*: -0.73). However, the results in column (2) indicate a strong negative association between *sec ro backlog* and formal investigation when insider selling is relatively lower (*t-statistic*:-3.03). Further, a test of coefficient differences across the sample partitions indicates a significant difference in the magnitude of the coefficients estimated in columns (1) and (2) (χ^2*-statistic*: 3.17). Collectively, the evidence in Table 4 suggests that SEC office busyness does not appear to constrain the investigation of restating firms with top executives who engaged in a high degree of insider selling before the restatement and is consistent with the SEC shifting resources to higher priority cases during periods of higher workload.

Next, we examine whether office busyness constrains the SEC's Division of Enforcement from investigating instances of large investor harm.[21] To do so, we partition the sample of restatement observations into quartiles based on three proxies for stock market losses: the *restatement return*, the short-window dollar value change in the firms' market capitalization

[20] We limit these analyses to only those instances in which there was some non-zero-dollar value of buying or selling of shares by top executives during the restatement periods (2,043 observations), in order to ensure that the firms are covered in the Thomson Reuters insiders database.

[21] In conversations with Division of Enforcement employees, we have learned that a common measure examined to assess shareholder harm by the Division is stock market loss. Consistent with this notion, evidence from concurrent research shows that stock price drops are strong determinants of initiation of a formal investigation (Holzman et al. 2021).

around the announcement (⊿ *mkt cap*), and the six-month market-adjusted buy-and-hold stock return ending two days after the filing of the restatement (*long window return*). In addition to the *restatement return*, we use ⊿ *mkt cap* as it also reflects the magnitude of wealth lost driven by the restatement and *long window return* because prior research suggests that stock prices begin to drop in the months preceding irregularity restatements (Hennes, Leone, and Miller 2008).

In Panel A of Table 5 we report the results from estimating Eq. (1) using those restatement observations in the bottom quartile and those observations in the top three quartiles of the three shareholder loss proxies. The results in column (1) indicate that for observations in the lowest quartile (most negative) of *restatement return*, that there is a negative association between *sec ro backlog* and formal investigation initiations (*t-statistic*: -2.49). Additionally, in column (2) we document a negative association between *sec ro backlog* and formal investigation initiations for those firms in the top three quartiles of the sample ranked on *restatement return* (*t-statistic*: -2.51). However, when testing for a difference in the magnitudes of the coefficients across columns (1) and (2), the results indicate that the constraining influence of *sec ro backlog* on investigation initiation is strongest when restatement returns are lowest (i.e., biggest drops) (χ^2-*statistic*: 4.91). In column (3), where *Δ mkt cap* being in the bottom quartile is the proxy for shareholder loss, the results indicate a negative and significant coefficient on *sec ro backlog* (*t-statistic*: -2.34). Further, the results in column (4), when *Δ mkt cap* is in the top three quartiles, show that the coefficient on *sec ro backlog* is not statistically significant (*t-statistic*: -0.97). A test across columns (3) and (4) indicates that the coefficient on *sec ro backlog* is more negative in column (3) (χ^2-*statistic*: 5.51). In column (5), where *long window return* being in the bottom quartile is the proxy for shareholder loss, the results indicate a negative and significant coefficient on *sec ro backlog* (*t-statistic*: -2.37). The results in column (6), for which *long*

window return is in the top three quartiles, indicate a statistically significant coefficient on *sec ro backlog* (*t-statistic*: -2.31). A test across columns (5) and (6) indicates that the coefficient on *sec ro backlog* is more negative in column (5) (χ^2-*statistic*: 2.89). Collectively, the results in Panel A of Table 5 suggest that SEC regional office backlog constrains the Division of Enforcement from initiating investigations into those restatements plausibly associated with the greatest shareholder harm, impeding the SEC's ability to pursue an important stated enforcement objective.

Given the findings in Panel A of Table 5, we attempt to investigate why existing backlog appears to constrain the opening of investigations into these types of restatements. If investigations into restatements that wrought the most harm against investors take longer to investigate, then the costliness of adding a new investigation in the face of an already high existing backlog might be too great for an already overburdened office. In Panel B of Table 5, we examine a sample of all restatement observations that are followed by SEC investigations in the year after the restatement. In this panel, we regress the natural logarithm of the length of the investigation (in days) on three proxies for restatements that were associated with the greatest shareholder harm. In columns (1), (2), and (3) the proxy for large losses incurred by investors is an indicator variable set to one when restatement return (*large losses – restatement return*), the change in total firm market value during the [-2,+2] restatement filing window (*large losses – ∠ mkt cap*), and the six-month market-adjusted buy-and-hold return ending two days after the restatement filing (*large losses – long window return*), is in the bottom quartile of the investigated firm subsample ranked by investigating office, respectively. In addition to restatement and firm controls, we also include investigating office-year fixed effects and industry fixed effects. The results in Panel B of Table 5 show positive and significant coefficients on *large losses – restatement return* and *large losses – ∠ mkt cap* (*t-statistics*: 2.23 and 2.97).

Additionally, while the coefficient estimated on *large losses – long window return* is not significant at conventional levels, the regression point estimate is positive. In total, the evidence in Panel B of Table 5 is generally consistent with investigations involving large shareholder losses taking longer to investigate. Consequently, busier SEC offices may pass on investigating some restatements that lead to large losses because these cases are costlier (in time) to investigate.

Lastly, we examine whether lobbying interacts with office busyness to deter investigation. We measure a firm's ex ante engagement in lobbying using data from LobbyView (Kim 2018; Pawliczek, Skinner, and Wellman 2021) in the year before the filing of its restatement. We then split our sample on those firms that lobbied the U.S. government before restating (Lobbyers_{t-1}) and those that did not ($\text{Non-Lobbyers}_{t-1}$) and estimate Eq. (1) on each subsample. The results tabulated in column (1) of Table 6 indicate a strong negative association between *sec ro backlog* and formal investigation initiations when a firm lobbied the U.S. government before filing their restatement (*t-statistic*: -2.85). While in column (2) we also find a strong negative association between *sec ro backlog* and formal investigation initiations when a firm did not lobby the U.S. government before filing their restatement (*t-statistic*: -3.41), a test of differences in the coefficients estimated in columns (1) and (2) indicates a more negative coefficient in column (1) (χ^2*-statistic*: 5.08). Thus, the results in Table 6 are generally consistent with the notion from prior literature that lobbying may help misreporting firms and executives avoid enforcement.[22]

4.2 – Impact of Case Backlog on the Investigation Process

While the opening of a formal investigation is an important part of the investigation process,

[22] Given the findings from Panel B of Table 5, in an untabulated analysis we examine whether a possible alternative explanation for the results in Table 6 is that lobbyers take longer to investigate. Using a similar approach, we regress investigation lengths on an indicator for whether a firm lobbied in the year before the filing of their restatement. We do not find evidence of a positive association in this test (t-statistic: -1.62), a result suggesting that costlier investigation is unlikely an explanation for the results in Table 6.

it is only one potential enforcement outcome that could plausibly be affected by workload constraints. Accordingly, we next examine whether SEC office busyness affects the outcomes of investigations into restating companies. To do so, we begin by examining outcomes for the 679 firm-restatements for which the SEC opened an investigation into the firm within one year after the restatement (i.e., investigation opened=1). Further, because we no longer study the decision to investigate conditional on restatement, we include the 353 firm investigations that preceded restatements (*preemptive investigation*=1) as those SEC investigations plausibly led companies to restate (1,032 investigation observations). We begin by estimating the following linear regression:

$$\begin{aligned} \textit{ln(investigation length)}\ [\textit{AAER}] = \alpha + \beta_1\, \textit{average sec ro backlog} + \beta_2 \textit{preemptive investigation} \\ + \text{restatement controls} + \text{firm controls} + \text{SEC office fixed effects} \\ + \text{industry fixed effects} + \varepsilon, \end{aligned} \quad (2),$$

where *ln(investigation length)* is the natural logarithm of the number of days an investigation is open, and *AAER* is an indicator variable set to one when a firm is either the subject of an SEC Accounting and Auditing Enforcement Release (AAER) during the time that the SEC's investigation is ongoing or the firm is the subject of an SEC AAER during the five-year period beginning on the investigation open date. The test variable of interest is *average sec ro backlog*, which is the average monthly number of open formal investigations in the office conducting the investigation. We also control for whether the investigation was a *preemptive investigation*, and include the restatement controls, firm controls, fixed effects for the office conducting the investigation ("SEC office fixed effects"), and industry fixed effects.

Table 7 presents the results of estimating Eq. (2) on our sample of firm investigations. The results in column (1) report the results with *ln(investigation length)* as the dependent variable. The results indicate a positive association between *average sec office backlog* and investigation

lengths (*t-statistic*: 2.33). These results suggest that when the investigating office is busier, investigating a restating firm takes longer. This finding is important because the Division of Enforcement has recently set a goal to shorten the length of accounting-related investigations (SEC 2019) and suggests an area for focus in this regard.

Further, the results in column (2) of Table 7 indicate a strong negative association between *average sec office backlog* and the ultimate receipt of an accounting-related enforcement action by a restating firm (*t-statistic*: -6.20). These results suggest that investigating office busyness constrains the SEC from publicly punishing misreporting firms. This result is economically large as well. After de-meaning *average sec office backlog* by investigating office, we calculate the standard deviation of the adjusted variable to be 86 cases. Consequently, a one-standard deviation increase in within investigating office busyness results in a 4.3 percentage-point lower likelihood of being the recipient of an enforcement action (i.e., -0.0005 x 86). Given that in our sample we find that approximately 22.2 percent of investigated firms are subject to an AAER, this finding represents a 19.4 percent reduction in the likelihood of enforcement compared to the sample mean (i.e., -.043/.222). This result is potentially concerning given that past SEC chairpersons have touted the unique deterrent value of enforcement actions.[23]

Given the strong attenuating effect of investigating office busyness on public enforcement actions, we move on in our analysis to examine whether there are spillover effects on private enforcement. Prior theoretical research has suggested that public enforcement may complement private enforcement because the evidence of misreporting presented by the public regulator facilitates building a complaint by class action plaintiffs, which ultimately leads to the filing of a lawsuit (Schantl and Wagenhofer 2020). Consequently, if office busyness reduces public

[23] For example, see Chair Mary Jo White's Speech to the NYU School of Law Program (https://www.sec.gov/news/speech/chair-white-speech-new-york-university-111816.html).

enforcement actions, it may also indirectly reduce class action lawsuit filings.

To examine whether there is evidence of a spillover on private enforcement activity, we use path analysis to model whether the negative influence of office busyness (*average sec office backlog*) on the propensity to issue an *AAER* also affects the likelihood of a class action lawsuit filing (*class action filed*). To do so, we employ a mediation model following the recommendation of MacKinnon and Dwyer (1993) and Hayes and Rockwood (2017). Prior research has used this approach to test whether a mediator variable Z drives a relationship between an X and Y variable (e.g., Bonsall et al. 2018, 2020; Landsman et al. 2012).

Table 8 presents the results of estimating this mediation analysis. Path A in Table 8 is comparable to the result documented in column (2) of Table 7, where we find that higher busyness is associated with a reduced likelihood of AAER (*z-statistic*: -2.95). Consistent with theory that public and private enforcement are strategic complements, Path B indicates an on average positive association between *AAER* and *class action filed* (*z-statistic*: 2.57). Consistent with SEC investigating office busyness having no direct influence on the likelihood that a class action lawsuit is filed (i.e., the SEC does not share personnel/resources with private law firms), we find that Path C (i.e., the direct path from *average sec office backlog* to *class action filed*) is insignificant at conventional levels (z-statistic: -0.35). Lastly, the indirect (or mediated) path A x B indicates that SEC office busyness spills over to indirectly reduce the likelihood that a firm is subject to a class action lawsuit (*z-statistic*: -2.17). This link suggests that SEC backlog indirectly influences private litigation, a result suggesting another SEC office busyness's important ramification on firms, managers, and shareholders. We believe this is an important factor that distinguishes our study from work on busyness in the comment letter setting. More broadly, our findings showing that constraining public enforcement can have unexpected consequences help

to inform the literature that examines the relative values of public and private enforcement (La Porta et al. 2006; Jackson and Roe 2009).

We next extend our analysis of the enforcement consequences of SEC office busyness to examine outcomes for those firms that are the subject of enforcement. Specifically, we examine a subsample of 229 investigated firms that were the subject of at least one AAER.[24] We examine whether investigating office busyness is associated with an extensive list of outcomes for those firms subject to enforcement. First, we examine whether the level of monetary penalties (including fines, disgorgement, and interest) that the SEC assesses against the firm and any related corporate officer is associated with the investigating office's average level of backlog during the investigation. If backlog impacts the investigation process, regulators may have fewer resources available to enforce to the fullest extent possible. In fact, the results in column (1) of Table 9 suggest that greater office busyness is associated with a reduced level of assessed penalties (*t-statistic*: -2.67). To examine whether increased SEC backlog facilitates the DOJ's ability to assess penalties against firms, we also examine the combined penalties assess by the SEC and DOJ (to the extent relevant) in column (2) of Table 9.[25] In this analysis we continue to document a negative association between average SEC office backlog and combined SEC and DOJ monetary penalties (*t-statistic*: -2.53).

In columns (3) and (4) of Table 9 we also examine whether office busyness is associated with the SEC's ability to penalize individuals (*individual penalized*) and to obtain an admission of

[24] We first identify any primary AAER, as identified in the USC AAER dataset that the firm is the subject of while the investigation is ongoing, or during the first five years after the investigation open date. Then we hand collect data from any AAER that is linked to the primary AAER in these tests.

[25] We collect penalties associated with DOJ enforcement from the Corporate Prosecution Registry. We match DOJ penalties related to an SEC investigation in the same manner as we do with AAER penalties with one exception. To permit the possibility that the DOJ enforcement action leads the SEC action, we also include penalties from any DOJ action against the firm investigated by the SEC in the year before the opening of the SEC investigation.

guilt (*admits guilt*) from either the firm or one of its officers. The results in these columns provide no evidence of a dependable relationship with office busyness (*t-statistics*: -0.42 and -0.10). Further, we also examine whether office level busyness affects the SEC's ability to directly make governance changes at a misreporting firm by either requiring changes to the firm's audit committee or to its board of directors (*govt required restructure*). The results in column (5) of Table 9 indicate a negative association with *average sec office backlog* and *govt required restructure* (t-statistic: -4.08), suggesting that office busyness impairs the SEC's ability to directly improve governance for misreporting firms. Lastly, in column (6) we examine whether office busyness is associated with the SEC's ability to cooperate with either other U.S. or foreign regulators (*cooperation*). The results indicate a positive association between office backlog and cooperation (*t-statistic*: 2.01), suggesting that backlog may facilitate cooperation (or be the result of) with other regulators, something the SEC has identified as a priority (SEC 2019).[26] Given the findings related to busyness reducing the incidence of public and private enforcement from Tables 7 and 8 and the level of monetary penalties, these findings call into question whether increased backlog due to cooperation are ideal from an agency perspective.

4.3 – Impact of Case Backlog for Uninvestigated Firms

The final research question that we examine is motivated from the findings in section 4.1 that regional office busyness impedes the SEC from investigating at least some major instances of misreporting that would be investigated absent resource constraints. If an SEC investigation significantly reduces a firm's future propensity to use accounting discretion opportunistically as suggested by concurrent research (Blackburne et al. 2021), then we would expect that those firms

[26] In untabulated analyses, we examine the robustness of the results in Tables 7, 8, and 9 to the inclusion of indicator variables for recessionary periods. While the results are generally consistent, the one notable exception is that the positive association between *average sec office backlog* and *cooperation* document in column (6) of Table 9 drops below conventional levels of significance (i.e., *t-statistic*: 1.49).

that were passed over for investigation may continue to operate sub-optimally from a shareholder perspective. We attempt to identify instances in which there is a material restatement filed, but due to recent downturns or upticks in case backlog in the assigned regional office, the firm is either investigated or not by the SEC. Then we examine whether there are discernible differences in future financial reporting quality, performance, and investor reliance on firm disclosures between those firms investigated and not investigated.

Given that prior research has documented significant variation in the implications of firm restatements for shareholder value (e.g., Hennes et al. 2008), we condition on a subsample of observations for which the filing of the restatement coincides with significant investor harm as measured by short-window stock returns around the restatement filing date. For convenience, we refer to these as "material restatements." Specifically, we examine only those restatements for which the *restatement return* was -10 percent or more negative.[27] Next, we attempt to identify instances in which regional office backlog swings downward or upward just before the firm files its restatement, plausibly suggesting that the regional office might either have capacity to open a new investigation or be too busy to open an incremental investigation. To do so we calculate the change in *sec ro backlog* from two months before and the most recent month just before the firm's restatement filing ("Δ *sec ro backlog*"). We then rank Δ *sec ro backlog* into quartiles. We define our test variable for this analysis as follows: *not investigated* is an indicator variable set to one when a restating firm is not investigated by the SEC (*investigation open*=0) and Δ *sec ro backlog* is in the top quartile (i.e., largest recent increases in backlog). Further, *not investigated* is set equal to zero when a restating firm is investigated by the SEC (*investigation open*=1) and Δ *sec ro backlog* is in the bottom quartile (i.e., largest recent drops in backlog). This selection

[27] We conduct robustness into the results in Table 10, by only examining those restatements in the bottom decile of *restatement return* (i.e., -12.7% stock return or less) and continue to document substantially similar results.

process results in a subsample of 123 observations in which 73 firm restatements were not investigated (not investigated=1) and 50 firm restatements were investigated (not investigated=0).

Using this subsample of observations, we use several proxies for future financial reporting quality and performance to examine whether the SEC's decision or inability to investigate a material restatement possibly results in some firms continuing to use opportunistic reporting discretion. To do so, we estimate the following linear regression:

$$\textit{future outcome} = \alpha + \beta_1 \textit{ not investigated} + \text{restatement controls} + \text{firm controls} + \text{industry fixed effects} + \varepsilon, \quad (3).$$

The measures for *future outcome* that we examine are the level of firm abnormal accruals in the next full calendar year after the filing of the restatement using both modified-Jones model abnormal accruals (*ModJones* Acc_{t+1}) and performance-matched modified-Jones model abnormal accruals (*PM ModJones* Acc_{t+1}). Further, we follow Amiram, Bozanic, and Rouen (2015) and examine whether the Financial Statement Divergence score related to the annual filing in the next full calendar (*FSD* $Score_{t+1}$) after the filing of the restatement differs if the firm was not investigated by the SEC. We also examine whether any reporting period over the subsequent two years after the firm's material financial restatement is subject to future restatement (*Future Restated Periods*). Lastly, we adopt a summary metric of post-restatement firm performance by calculating the two-year size-adjusted buy-and-hold stock return starting three days after the restatement filing date (*Post 2 yr stock return*).

Table 10 presents the results of estimating Eq. (3). The results indicate a positive association between *not investigated* and *ModJones* Acc_{t+1}, *PM ModJones* Acc_{t+1}, and the *FSD* $Score_{t+1}$ (*t-statistics*: 2.18, 1.93, and 1.98, respectively), suggesting that future financial reporting quality is lower for those firms not investigated by the SEC following increases in busyness relative to

firms investigated following decreases in busyness. However, the results do not indicate a statistically significant association between *not investigated* and future restated periods (*t-statistic*: 0.45). Lastly, the results in column (5) indicate modest evidence of reduced firm performance in the future based on stock returns over the next two years (*t-statistic*: -1.67). While the findings are generally consistent across all five measures examined, we cautiously interpret the findings in Table 10 as indicating that those firms not investigated by the SEC due to busyness may continue to use opportunistic reporting discretion in the future.[28]

Given the evidence in Table 10 of reduced future financial reporting quality for those firms not investigated by the SEC after a material restatement, we examine whether investors reduce their reliance on future firm disclosures. Prior research on financial reporting quality provides evidence that investors rely less on future earnings releases when financial reporting quality is lower (e.g., Wilson 2008; Chen, Cheng, and Lo 2014; Gipper, Leuz, and Maffet 2020). Accordingly, we examine a sample of all earnings announcements during the two years before and after the filing of the material restatements by the subsample of firms examined in the Table 10 analyses (1,660 firm earnings announcement observations). To examine whether uninvestigated firms experience a drop in reliance on their future earnings releases, we estimate the following difference-in-differences model based on recent research on the reaction to earnings releases (Arif, Marshall, Schroeder, and Yohn 2019):

$$\begin{aligned} |ea\ car| = {} & \alpha + \beta_1\ post\ restatement * not\ investigated + \beta_2\ post\ restatement \\ & + \beta_3\ not\ investigated + firm\ controls + restatement\ controls \\ & + industry\ fixed\ effects + calendar\ quarter\ fixed\ effects + \varepsilon, \end{aligned} \quad (4),$$

where $|ea\ car|$ is the absolute value of the [0,1] market-adjusted earnings announcement return

[28] In untabulated analyses, we also examine whether investigated firms that are not recipients of AAERs during high backlog periods, compared to investigated firms that are recipients of AAERs during low backlog periods have different financial reporting quality and stock returns after the investigations are closed. In general, the results of these tests do not detect statistical differences. The lack of a statistical difference for firms receiving an AAER is consistent with the notion that the investigation is a substantial deterrent in and of itself.

and serves as a proxy for the degree of investor revision of market value based on the firms earnings release. *Post restatement* is an indicator set to one for any earnings announcement during the two-year window after the filing date of the material restatement and set to zero for any earnings announcement during the two-year window before the filing date of the material restatement. *Not investigated* is defined in the same manner as in Eq. (3). Accordingly, a negative coefficient on the interaction term, *post restatement * not investigated*, will indicate whether investors differentially reduce their reliance on future firm earnings releases for those firms not formally investigated by the SEC in periods following a restatement. We also include the firm-level controls included in Arif et al. (2019) and the restatement controls from Eq. (1) to account for any major differences in the material restatements. We also include industry and calendar-quarter fixed effects. We define all variables in Appendix A.

Table 11 reports the results of estimating Eq. (4) on our sample of 1,660 firm earnings announcements. The initial results in column (1) show a significant negative coefficient for the difference-in-differences term, *post restatement * not investigated* (*t-statistic*: -2.65). Further, the results in column (2) add the restatement controls and continue to show a negative difference-in-differences coefficient (*t-statistics*: -2.49). These results complement those in Table 10, and collectively suggest that those firms that are not investigated by the SEC continue to exhibit reduced financial reporting quality and that investors reduce their reliance on these firms' financial reports. We believe this evidence helps to shine light on an adverse consequence of constraining the SEC's ability to investigate misreporting firms.

5. Conclusion

The ability of the SEC to effectively monitor and penalize firms is an important part of well-functioning capital markets. Using a set of all investigations the SEC has closed since 2000, we provide evidence that investigation case backlog appears to hamper the SEC's investigation

process. It appears that SEC offices are unable to quickly expand their investigative staff in response to increased backlog and are, therefore, less likely to pursue an investigation of a particular firm because existing resources are closer to their peak capacity.

We believe the evidence we present in this study has important practical implications for those making regulatory staffing decisions and budgetary appropriations. In particular, the SEC may want to consider flexible staffing arrangements that would increase its ability to shift staff across offices when there is a large backlog of investigations currently open at a particular office. Additionally, the SEC may want to understand better why cases associated with greater shareholder losses are not being investigated when case backlog is greater. Finally, those in charge of budgetary appropriations may want to consider the budgetary tradeoffs of having excess enforcement staff to be able to open investigations during periods of high case backlog.

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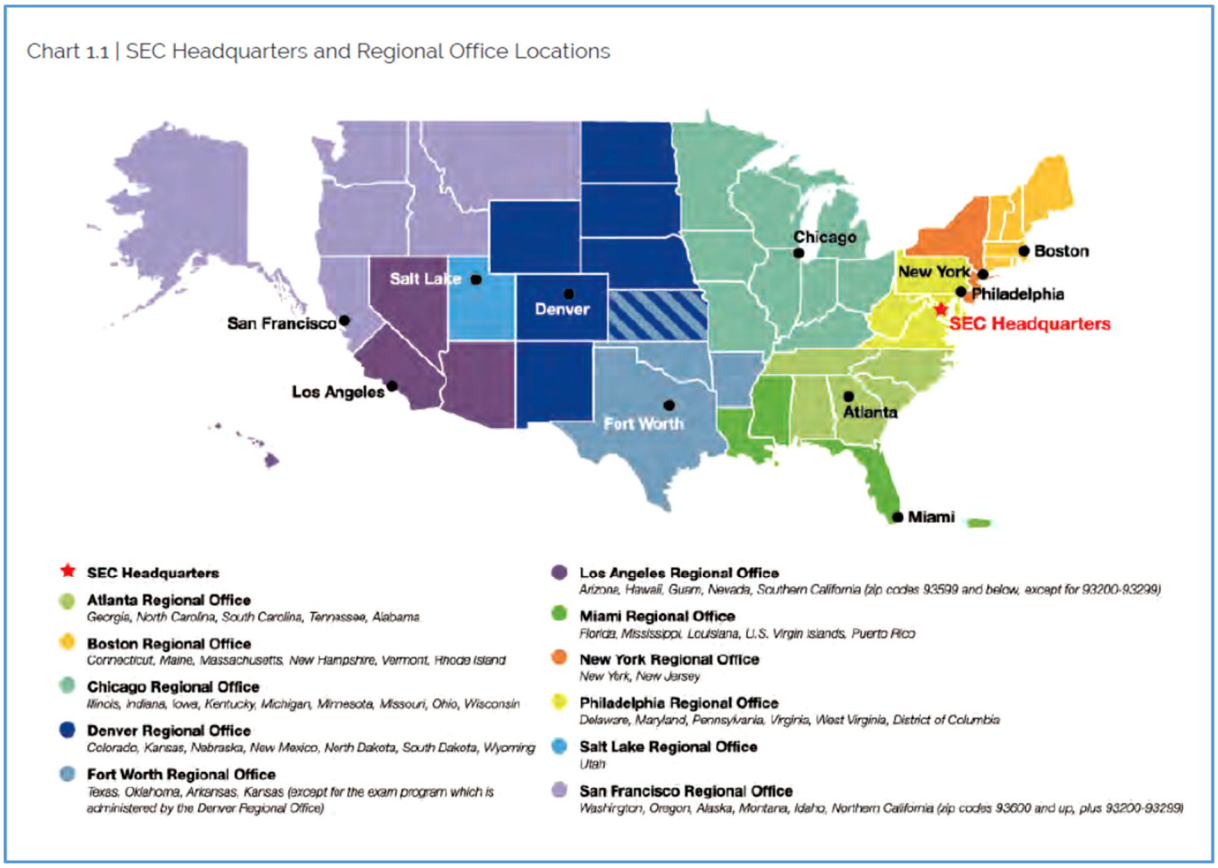
Figure 1

SEC Home and Regional Offices



Source: U.S. Securities and Exchange Commission, Agency Financial Report, Fiscal Year 2016

Table 1
Descriptive Statistics

Panel A: Sample descriptive statistics

Variable	N	Mean	Std Dev	0.25	Mdn	0.75
Dependent measure						
investigation opened	4,657	0.146	-	-	-	-
investigation opened - fraud/disclosure	4,657	0.115	-	-	-	-
Test variable						
sec ro backlog	4,657	226	151	132	180	257
Additional constraints						
sec hq backlog	4,657	764	187	551	804	953
geo distance from ro (miles)	4,657	144	175	17	59	232
Restatement controls						
revenue recognition	4,657	0.167	-	-	-	-
restated time period (days)	4,657	717	625	272	545	1000
num issues	4,657	2.1	1.6	1.0	2.0	3.0
auditor awareness	4,657	0.577	-	-	-	-
restatement return	4,657	-0.017	0.100	-0.057	-0.009	0.028
media tone	4,657	51	10	48	50	56
Firm controls						
mve (in millions of $)	4,657	1,686	4,301	83	314	1,187
small size	4,657	0.41	-	-	-	-
sp500	4,657	0.08	-	-	-	-
leverage	4,657	0.25	0.233	0.037	0.195	0.388
btm	4,657	0.70	0.709	0.302	0.544	0.888
firm age	4,657	16	15	6	12	21

This panel presents descriptives for the restatement sample. All continuous variables are winsorized at the 1% and 99% levels.

Panel B: SEC Office Case Backlog Descriptive Statistics

	monthly case backlog		*monthly investigations opened*	
	Mean	Std Dev	Mean	Std Dev
Home Office (DC)	740.1	194.7	12.9	6.5
Regional Offices				
Atlanta	146.1	47.2	3.2	2.2
Boston	141.5	34.4	4.4	2.8
Chicago	228.7	50.0	4.7	2.9
Denver	114.8	29.6	3.2	2.0
Fort Worth	175.6	34.6	4.2	2.4
Los Angeles	208.8	64.2	5.9	4.6
Miami	150.4	34.0	3.8	3.4
New York	551.3	134.1	7.8	4.4
Philadelphia	121.8	25.9	2.7	2.0
Salt Lake	51.7	11.1	1.2	1.2
San Francisco	132.4	48.6	4.3	3.3

This panel presents descriptives for monthly investigation backlogs and initiations by SEC office.

Table 2
Formal Investigation Likelihood

	DV =	investigation opened			fraud /disclosure
	pred.	(1)	(2)	(3)	(4)
Test variable					
sec ro backlog	**(-)**	**-0.00053*** [-2.85]**	**-0.00080*** [-3.38]**	**-0.00080*** [-3.78]**	**-0.00071*** [-3.26]**
Additional constraints					
sec hq backlog	(-)	\	0.00022 [1.46]	0.00022 [1.53]	0.00019 [1.45]
geo distance from ro	(-)	\	0.00003 [1.05]	0.00003 [0.88]	0.00003 [0.96]
Restatement controls					
revenue recognition	(+)	\	0.09375*** [5.96]	0.09246*** [5.63]	0.08328*** [5.31]
restated time period	(+)	\	0.00008*** [5.97]	0.00008*** [5.11]	0.00007*** [6.37]
num issues	(+)	\	0.01225* [1.66]	0.01011 [1.40]	0.00975 [1.54]
auditor awareness	(?)	\	0.04536*** [3.12]	0.05115*** [3.84]	0.05058*** [6.46]
restatement return	(-)	\	-0.55410*** [-7.58]	-0.55568*** [-7.32]	-0.51183*** [-6.59]
media tone	(-)	\	-0.00045 [-1.62]	-0.00073*** [-2.75]	-0.00083*** [-3.38]
Firm controls					
ln(mve)	(+)	\	\	0.01845*** [3.69]	0.01218*** [2.78]
small size	(+)	\	\	-0.00985 [-0.59]	-0.00479 [-0.31]
sp500	(?)	\	\	0.01592 [0.75]	0.00881 [0.46]
leverage	(?)	\	\	0.05212* [1.93]	0.03479* [1.90]
btm	(?)	\	\	0.01885* [1.80]	0.01502 [1.35]
firm age	(?)	\	\	-0.00055 [-1.12]	-0.00018 [-0.47]
constant	(?)	0.30404** [2.16]	0.08900 [0.55]	-0.03971 [-0.24]	0.01958 [0.12]
Observations		4,657	4,657	4,657	4,657
Adjusted R^2		5.9%	13.3%	14.2%	14.5%
Regional Office Year FE		Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes	Yes

This table tabulates the results of estimating Eq. (1) using a linear probability model. In columns (1-3) the dependent variable is a binary variable set to one when the SEC opens an investigation into a company within one year of a restatement. In column (4) the dependent variable is a binary variable set to one when the SEC opens an investigation with a primary classification of "Financial Fraud/Issuer Disclosure" into a company within one year of a restatement. Standard errors are clustered by firm and SEC regional office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 3
Formal Investigation Likelihood - Revenue Recognition

sample partition:	revenue recognition=1	revenue recognition=0
DV = investigation opened	(1)	(2)
Test variable		
sec ro backlog	**0.00075**	**-0.00082*** **
	[0.78]	**[-3.10]**
Additional constraints		
sec hq backlog	-0.00050	0.00020
	[-1.24]	[1.58]
geo distance from ro	0.00004	0.00005
	[0.42]	[1.24]
Restatement controls		
restated time period	0.00007	0.00008***
	[1.64]	[5.24]
num issues	0.02294*	0.00634
	[1.66]	[1.01]
auditor awareness	0.04930	0.05144***
	[0.92]	[4.21]
restatement return	-0.60615***	-0.51471***
	[-4.62]	[-6.07]
media tone	-0.00181	-0.00050
	[-1.16]	[-1.22]
Firm controls		
ln(mve)	-0.00940	0.02590***
	[-0.69]	[4.20]
small size	-0.07621*	0.01352
	[-1.67]	[0.67]
sp500	-0.12100**	0.03810**
	[-2.25]	[2.15]
leverage	0.10065	0.04583
	[1.56]	[1.41]
btm	-0.06946***	0.02967***
	[-3.31]	[2.78]
firm age	-0.00059	-0.00066
	[-0.49]	[-1.41]
constant	0.55268*	-0.04071
	[1.92]	[-0.25]
Test *sec ro backlog* across partition:	**2.35**	
Observations	778	3,879
Adjusted R^2	20.9%	12.6%
Regional Office Year FE	Yes	Yes
Industry FE	Yes	Yes

This table tabulates the results of estimating Eq. (1) using a linear prediction model on two subsamples. Column (1) estimates the model on those observations where the restatement involved revenue recognition issues. Column (2) estimates the model on those observations where the restatement did not involve revenue recognition issues. Standard errors are clustered by firm and SEC regional office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 4
Formal Investigation Likelihood - Top Insider Selling

insider sales ratio partition:	Top 50% of Insider Selling	Bottom 50% of Insider Selling
DV = investigation opened	(1)	(2)
Test variable		
sec ro backlog	**-0.00045**	**-0.00136*** **
	[-0.73]	**[-3.03]**
Additional constraints		
sec hq backlog	0.00045	0.00037
	[1.47]	[0.77]
geo distance from ro	-0.00007	0.00015**
	[-0.93]	[2.20]
Restatement controls		
revenue recognition	0.00115	0.09867**
	[0.04]	[2.31]
restated time period	0.00009***	0.00004**
	[2.69]	[2.28]
num issues	0.00111	0.02612
	[0.10]	[1.59]
auditor awareness	0.05553**	0.10715***
	[2.19]	[5.09]
restatement return	-0.63143***	-0.75806***
	[-4.00]	[-5.19]
media tone	-0.00073	-0.00106
	[-0.44]	[-0.98]
Firm controls		
ln(mve)	0.02490**	0.01411
	[2.10]	[0.76]
small size	-0.01985	-0.00902
	[-0.47]	[-0.14]
sp500	-0.02840	0.04677
	[-0.76]	[0.97]
leverage	0.05967	0.19451***
	[0.72]	[3.33]
btm	-0.01744	0.04486
	[-0.45]	[1.32]
firm age	-0.00023	-0.00072
	[-0.23]	[-0.82]
constant	-0.51628***	-0.03815
	[-2.73]	[-0.09]
Test *sec ro backlog* across partition:	**3.17***	
Observations	1,021	1,022
Adjusted R^2	20.0%	17.4%
Regional Office Year FE	Yes	Yes
Industry FE	Yes	Yes

This table tabulates the results of estimating Eq (1) using a linear prediction model on two subsamples First, we calculate the net insider seller ratio for all trades during the restated time period We only include those observations where top insiders made at least one insider trade (buy or sell) during the restated period Column (1) estimates the model on those observations in the top half ranked on the insider sales ratio and column (2) estimates the model on those observations in the bottom half of the insider sales ratio Standard errors are clustered by firm and SEC regional office All variables are winsorized at the 1% and 99% levels All variable definitions are provided in Appendix A ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively

Table 5
Formal Investigation Likelihood - Shareholder Harm

Panel A: Formal Investigation Likelihood - Shareholder Harm

Shareholder Harm Proxy:	restatement return		Δ mkt cap		long window return	
Partition:	Q 1	Q 2-4	Q 1	Q 2-4	Q 1	Q 2-4
DV = investigation opened	(1)	(2)	(3)	(4)	(5)	(6)
Test variable						
sec ro backlog	**-0.00147****	**-0.00046****	**-0.00206****	**-0.00020**	**-0.00132****	**-0.00050****
	[-2.49]	**[-2.51]**	**[-2.34]**	**[-0.97]**	**[-2.37]**	**[-2.31]**
Additional constraints						
sec hq backlog	0.00039	0.00015	0.00032	0.00020	0.00001	0.00016
	[0.99]	[1.61]	[0.48]	[1.47]	[0.01]	[0.95]
geo distance from ro	-0.00000	0.00002	0.00013	-0.00000	0.00008	0.00001
	[-0.03]	[1.09]	[1.10]	[-0.17]	[1.20]	[0.27]
Restatement controls						
revenue recognition	0.11625***	0.06623***	0.04517	0.09464***	0.12896***	0.06870***
	[2.73]	[4.47]	[0.86]	[5.59]	[6.66]	[3.18]
restated time period	0.00007**	0.00008***	0.00007**	0.00007***	0.00008***	0.00008***
	[2.12]	[6.10]	[2.45]	[5.49]	[2.73]	[5.90]
num issues	0.00419	0.00874	0.01451	0.00742	0.00865	0.01186*
	[0.29]	[1.45]	[0.97]	[1.26]	[0.61]	[1.77]
auditor awareness	0.07315*	0.03294**	0.05295	0.04405**	0.12456***	0.02687*
	[1.92]	[2.02]	[1.60]	[2.56]	[3.03]	[1.72]
restatement return	-1.01029***	-0.04970	-1.08480***	-0.29208***	-0.58357***	-0.39748***
	[-4.21]	[-0.48]	[-4.05]	[-5.64]	[-4.42]	[-7.26]
media tone	0.00058	-0.00054	-0.00199	-0.00035	0.00051	-0.00057
	[0.37]	[-1.57]	[-1.47]	[-1.31]	[0.70]	[-1.60]
Firm controls						
ln(mve)	0.03604**	0.01864***	0.01602	0.01481**	0.02826*	0.02032***
	[2.38]	[2.94]	[1.04]	[2.09]	[1.82]	[3.28]
small size	-0.03479	0.00818	-0.04239	0.00561	-0.04728	0.00712
	[-0.60]	[0.33]	[-0.60]	[0.24]	[-1.05]	[0.35]
sp500	-0.07432	0.03568	-0.01941	0.07443**	0.01774	0.01486
	[-0.89]	[1.52]	[-0.43]	[2.14]	[0.19]	[0.75]
leverage	0.05015	0.04745	0.03120	0.04249	0.08329	0.03282
	[0.93]	[1.19]	[0.39]	[1.20]	[1.38]	[1.17]
btm	0.02790**	0.01963*	0.01733	0.01253	0.00804	0.02600***
	[2.05]	[1.86]	[0.82]	[1.19]	[0.33]	[2.86]
firm age	0.00156	-0.00097**	0.00093	-0.00089**	0.00165	-0.00054
	[1.56]	[-2.56]	[1.06]	[-1.97]	[1.15]	[-1.10]
constant	0.41884	-0.25574**	0.44524*	-0.08041	0.40357	0.00719
	[0.92]	[-2.00]	[1.89]	[-0.48]	[1.31]	[0.05]
Test *sec ro backlog* across partition:	**4.91****		**5.51****		**2.89***	
Observations	1,165	3,492	1,165	3,492	1,165	3,492
Adjusted R^2	18.0%	10.8%	17.9%	10.4%	20.6%	11.7%
Regional Office Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

This table tabulates the results of estimating Eq (1) using a linear prediction model on six subsamples Columns (1) and (2) estimates the model on those observations in the bottom quartile of *restatement return* and in the top three quartiles of *restatement return*, respectively Columns (3) and (4) estimates the model on those observations in the bottom quartile of the change in total firm market value during the [-2,+2] restatement filing window and in the top three quartiles of the change in total firm market value during the [-2,+2] restatement filing window, respectively Columns (5) and (6) estimates the model on those observations in the bottom quartile of the six-month market adjusted buy-and-hold return ending two days after the restatement filing and in the top three quartiles of of the six-month market adjusted buy-and-hold return ending two days after the restatement filing, respectively Standard errors are clustered by firm and SEC regional office All variables are winsorized at the 1% and 99% levels All variable definitions are provided in Appendix A ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively

Table 5
Formal Investigation Likelihood - Shareholder Harm

Panel B: Shareholder Harm and Investigation Length

	DV =	ln(investigation length)		
	pred.	(1)	(2)	(3)
Test variables				
large losses - restatement return	**(+)**	**0.23413** **[2.23]**	\	\
large losses - Δ mkt cap	**(+)**	\	**0.15391*** **[2.97]**	\
large losses - long window return	**(+)**	\	\	**0.10720** **[1.57]**
Restatement controls				
revenue recognition	(?)	0.08197 [0.83]	0.09706 [1.03]	0.09764 [0.99]
restated time period	(?)	0.00008 [1.44]	0.00008 [1.28]	0.00008 [1.38]
num issues	(?)	-0.00827 [-0.57]	-0.01334 [-0.98]	-0.01310 [-0.99]
auditor awareness	(?)	0.01459 [0.12]	0.03729 [0.30]	0.03536 [0.29]
media tone	(?)	-0.00499** [-2.48]	-0.00587** [-2.35]	-0.00593** [-2.24]
Firm controls				
ln(mve)	(?)	0.08345* [1.87]	0.05931 [1.15]	0.08569* [1.71]
small size	(?)	0.12682 [0.96]	0.11714 [0.83]	0.12065 [0.85]
sp500	(?)	0.08581 [0.52]	0.10953 [0.60]	0.06774 [0.35]
leverage	(?)	0.11066 [0.68]	0.12270 [0.79]	0.10815 [0.65]
btm	(?)	0.05301 [1.63]	0.04609 [1.29]	0.04952 [1.41]
firm age	(?)	-0.00293 [-0.86]	-0.00385 [-1.11]	-0.00320 [-0.91]
constant	(?)	6.22486*** [24.16]	6.69527*** [18.92]	6.44714*** [15.59]
Observations		679	679	679
Adjusted R^2		0.340	0.330	0.327
SEC Office Year FE		Yes	Yes	Yes
Industry FE		Yes	Yes	Yes

This table tabulates the results of regressing the investigation length (logged), for all investigations opened into restating firms in the one year after a restatement, on three proxies for large losses incurred by investors. In columns (1), (2), and (3) the proxy for large losses incurred by investors is an indicator variable set to one when restatement return, the change in total firm market value during the [-2,+2] restatement filing window, and the six-month market adjusted buy-and-hold return ending two days after the restatement filing, is in the bottom quartile of the investigated firm subsample ranked by investigating office, respectively. Standard errors are clustered by firm and SEC regional office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 6
Formal Investigation Likelihood - Lobbying Firms

Lobbyer partitions:	$Lobbyers_{t-1}$	$Non\text{-}Lobbyers_{t-1}$
DV = investigation opened	(1)	(2)
Test variable		
sec ro backlog	**-0.00145*** **	**-0.00063*** **
	[-2.85]	**[-3.41]**
Additional constraints		
sec hq backlog	0.00061	0.00016
	[1.48]	[1.06]
geo distance from ro	-0.00007	0.00005
	[-0.65]	[1.20]
Restatement controls		
revenue recognition	0.09781**	0.09879***
	[2.29]	[4.56]
restated time period	0.00003	0.00009***
	[0.80]	[5.92]
num issues	0.00361	0.01224**
	[0.21]	[2.02]
auditor awareness	0.03300	0.04994***
	[0.82]	[4.42]
restatement return	-0.75966***	-0.51076***
	[-4.04]	[-7.17]
media tone	-0.00074	-0.00067**
	[-0.51]	[-2.07]
Firm controls		
ln(mve)	0.01845	0.01695***
	[1.24]	[2.77]
small size	-0.02239	-0.01376
	[-0.30]	[-0.91]
sp500	0.02189	-0.00493
	[0.50]	[-0.11]
leverage	0.10150	0.04806***
	[1.02]	[2.88]
btm	0.03158	0.01753*
	[0.92]	[1.85]
firm age	-0.00081	-0.00038
	[-0.80]	[-0.83]
constant	0.46542**	0.20566
	[1.98]	[1.12]
Test sec ro backlog across partition:	**5.08****	
Observations	957	3,700
Adjusted R^2	9.1%	14.9%
Regional Office Year FE	Yes	Yes
Industry FE	Yes	Yes

This table tabulates the results of estimating Eq. (1) using a linear prediction model on two subsamples. Column (1) estimates the model on those observations where the firms were actively lobbying Congress in the year prior to their restatement. Column (2) estimates the model on those observations where the firms were not actively lobbying Congress in the year prior to their restatement. Standard errors are clustered by firm and SEC regional office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

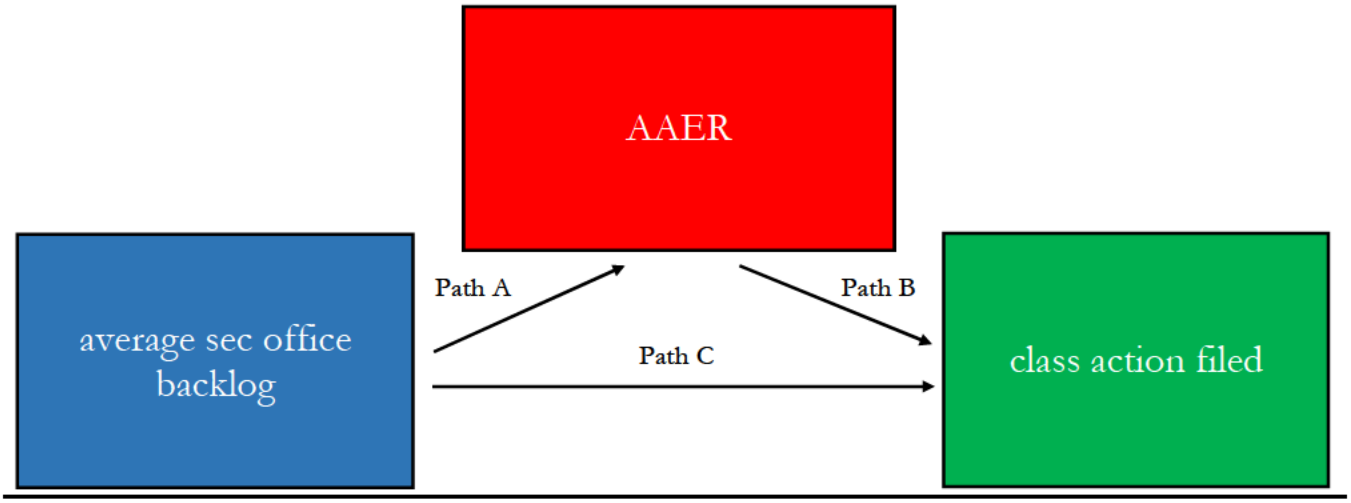
Table 7
Investigation Outcomes and Investigating Office Busyness

DV=	ln(investigation length)	AAER
	(1)	(2)
Test variables		
average sec office backlog	**0.00075****	**-0.00050*****
	[2.33]	**[-6.20]**
Investigation control		
preemptive investigation	0.05555	0.01252
	[1.47]	[0.31]
Restatement controls		
revenue recognition	0.16903*	0.09075***
	[1.95]	[3.14]
restated time period	0.00005*	0.00003
	[1.85]	[1.34]
num issues	0.01828	-0.00662
	[1.56]	[-1.06]
auditor awareness	-0.08564	-0.01633
	[-1.25]	[-0.89]
restatement return	-0.68402***	-0.33725***
	[-4.27]	[-3.51]
media tone	-0.00177	-0.00122
	[-0.73]	[-1.07]
Firm controls		
ln(mve)	0.01735	-0.00486
	[0.38]	[-0.35]
small size	0.04070	0.02347
	[0.41]	[0.63]
sp500	0.24538**	0.11876**
	[2.27]	[2.14]
leverage	0.21235	0.18185***
	[1.45]	[2.77]
btm	0.06022*	-0.01036
	[1.77]	[-0.44]
firm age	-0.00085	-0.00171
	[-0.45]	[-1.39]
Constant	6.61841***	0.08506
	[24.94]	[0.86]
Observations	1,032	1,032
Adjusted R-squared	0.236	0.060
SEC Office FE	Yes	Yes
Industry FE	Yes	Yes

This table tabulates the results of estimating Eq. (2) on a sample of investigated firms. In columns (1) and (2) the dependent measure is the SEC investigation length, and an indicator variable for whether an AAER subsequently follows the opening of the investigation, respectively. Standard errors are clustered by firm and investigating office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 8
Path Analyses
Office Busyness, SEC Enforcement, and Private Enforcement

Path Model Illustration



Estimated Path Cofficients		
Direct Paths	**Coefficient**	**Z-stat**
A	-0.00049***	-2.95
B	0.09765***	2.57
C	-0.00016	-0.35
Indirect Path	**Coefficient**	**Z-stat**
AxB	**-0.00005****	**-2.17**
Observations		1,032
Controls		Yes
SEC Office FE		Yes
Industry FE		Yes

This table presents the results of a path analysis where we examine whether the relationship between SEC office backlog and class action lawsuits filed against restating firms is mediated by the SEC likelihood of issuing an AAER against a restating firm. Standard errors are cluster-adjusted using bootstrap simulation by firm and investigating office. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 9
Enforcement Outcomes and Office Busyness

	DV= ln(SEC penalties)	ln(SEC + DOJ penalties)	individual penalized	admits guilt	govt required restructure	cooperation
	(1)	(2)	(3)	(4)	(5)	(6)
Test variables						
average sec office backlog	**-0.01433*** **	**-0.01397** **	**-0.00011**	**-0.00003**	**-0.00098*** **	**0.00029** **
	[-2.67]	**[-2.53]**	**[-0.42]**	**[-0.10]**	**[-4.08]**	**[2.01]**
Investigation controls						
preemptive investigation	0.91640*	1.06166*	0.03160	0.03849	0.01201	0.01720
	[1.68]	[1.87]	[0.90]	[0.66]	[0.44]	[0.28]
Restatement controls						
revenue recognition	-0.64492	-0.68040	0.07916**	0.14846**	-0.01058	0.04312
	[-0.75]	[-0.79]	[2.55]	[2.19]	[-0.20]	[1.16]
restated time period	-0.00001	0.00000	-0.00001	0.00004	-0.00001	-0.00002
	[-0.01]	[0.00]	[-0.21]	[0.92]	[-0.48]	[-0.62]
num issues	0.28003	0.27427	-0.03861**	0.01110	0.03723***	0.00831
	[1.51]	[1.46]	[-2.19]	[0.59]	[3.35]	[0.76]
auditor awareness	0.01305	-0.00844	0.07414*	-0.09964	-0.09392	-0.01215
	[0.01]	[-0.01]	[1.68]	[-1.40]	[-1.51]	[-0.39]
restatement return	-1.99620	-1.98765	-0.13258	-0.32521	0.15143	-0.21789
	[-0.86]	[-0.86]	[-1.13]	[-1.27]	[1.15]	[-0.89]
media tone	-0.05695*	-0.05916*	0.00084	-0.00204	-0.00507	0.00268
	[-1.75]	[-1.74]	[0.45]	[-1.21]	[-1.52]	[0.94]
Firm controls						
ln(mve)	0.52027	0.53666	0.01050	0.01132	-0.01742	0.06583***
	[0.88]	[0.91]	[0.24]	[0.25]	[-0.46]	[2.86]
small size	0.03799	-0.07972	0.17269	0.08468	-0.05013	0.09842**
	[0.02]	[-0.04]	[1.07]	[0.85]	[-0.56]	[2.18]
sp500	2.73110	2.77310	0.04985	0.00702	0.13253	-0.15383
	[1.04]	[1.08]	[0.42]	[0.05]	[1.34]	[-1.13]
leverage	2.89425	2.89750	0.12182	0.33550***	0.11359	0.48445***
	[1.34]	[1.31]	[1.49]	[2.75]	[1.07]	[3.65]
btm	0.14954	0.29314	-0.02829	-0.01991	-0.02663	0.04864
	[0.20]	[0.40]	[-0.84]	[-0.41]	[-0.47]	[1.48]
firm age	-0.03706*	-0.03780*	-0.00449	-0.00244	-0.00206	0.00093
	[-1.68]	[-1.70]	[-1.16]	[-0.71]	[-0.86]	[0.43]
Constant	-1.84605	-1.79718	0.81329**	0.79022**	0.53811*	-0.85470***
	[-0.57]	[-0.56]	[2.18]	[2.26]	[1.75]	[-3.23]
Observations	229	229	229	229	229	229
Adjusted R-squared	0.307	0.305	0.304	0.171	0.289	0.136
SEC Office FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

This table tabulates the results of regressing several enforcement outcome measures on the average level of case backlog in the office conducting the investigation and controls In columns (1), (2), (3), (4), (5), and (6) the dependent measure is the log of all penalties assessed by the SEC against the firm and corporate officers, the log of all penalties assessed against the firm and corporate officers by the SEC and DOJ, an indicator for whether an individual is penalized by the SEC, an indicator for whether a party subject to the enforcement action admits guilt, an indicator for whether the SEC required the company to restructure its governance (e g , add an independent director) in the enforcement action, and an indicator for whether the SEC cooperated with another regulator (e g , a US attorney's office), respectively Standard errors are clustered by firm and investigating office All variables are winsorized at the 1% and 99% levels All variable definitions are provided in Appendix A ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively

Table 10
Firms Investigated in Low Backlog Periods v. Firms Not Investigated in High Backlog Periods
Future Financial Reporting Quality and Performance

	DV=	ModJones Acc_{t+1}	PM ModJones Acc_{t+1}	FSD $Score_{t+1}$	Future Restated Periods	Post 2 yr stock return
		(1)	(2)	(3)	(4)	(5)
not investigated		**0.05221****	**0.06209***	**0.00508***	**0.04868**	**-0.36970***
		[2.18]	**[1.93]**	**[1.98]**	**[0.45]**	**[-1.67]**
restatement controls						
revenue recognition		-0.02139	-0.06105	0.00133	-0.17997	-0.00309
		[-0.77]	[-1.39]	[0.54]	[-1.56]	[-0.01]
restated time period		0.00004**	0.00005*	0.00000	-0.00009	-0.00000
		[2.13]	[1.67]	[1.48]	[-1.00]	[-0.03]
num issues		0.00242	0.00448	-0.00109	0.01596	0.01801
		[0.31]	[0.50]	[-1.53]	[0.48]	[0.32]
auditor awareness		0.00969	-0.00079	0.00097	-0.00481	0.08386
		[0.35]	[-0.02]	[0.43]	[-0.04]	[0.40]
restatement return		-0.28950	-0.24145	0.00003	-0.08861	1.77656
		[-1.45]	[-1.08]	[0.00]	[-0.13]	[1.61]
media tone		0.00066	-0.00118	-0.00003	0.00141	0.01761*
		[0.47]	[-0.64]	[-0.26]	[0.23]	[1.76]
firm controls						
ln(mve)		-0.00175	-0.02031	-0.00116	-0.06980	0.13085
		[-0.11]	[-0.97]	[-0.83]	[-1.14]	[1.14]
small size		0.06504	0.05083	-0.00293	-0.26352	0.33449
		[1.50]	[0.95]	[-0.72]	[-1.47]	[0.85]
sp500		0.00311	-0.02281	-0.00576	0.69204**	-1.04893**
		[0.06]	[-0.23]	[-1.11]	[2.34]	[-2.37]
leverage		-0.04935	-0.03360	-0.00693	0.08948	0.60456
		[-0.93]	[-0.49]	[-1.40]	[0.35]	[1.06]
btm		-0.05174***	-0.07222***	-0.00237	-0.10559	0.30572*
		[-2.81]	[-2.74]	[-1.21]	[-1.60]	[1.81]
firm age		0.00033	0.00027	-0.00004	0.00160	0.01292
		[0.22]	[0.14]	[-0.28]	[0.28]	[1.03]
Constant		-0.10581	0.17824	0.05009***	0.52495	-1.39065
		[-0.48]	[0.64]	[4.43]	[1.01]	[-1.37]
Observations		90	87	91	123	123
Adjusted R-squared		0.148	0.195	0.128	0.016	0.133
Industry FE		Yes	Yes	Yes	Yes	Yes

This table tabulates the results of estimating Eq. (3). In this analysis we regress several proxies for future financial reporting quality on an indicator for whether a firm with a highly negative restatement (i.e., stock returns less than -10%) was investigated by the SEC and controls. In columns (1), (2), (3), (4), and (5), the dependent variable is modified-Jones abnormal accruals, performance-matched modified-Jones abnormal accruals, the financial statement divergence score, an indicator for whether a firm restates a period in the next two years, and post-restatement buy-and-hold 2 year stock returns (size-adjusted), respectively. Standard errors are clustered by firm. All variables are winsorized at the 1% and 99% levels. All variable definitions are provided in Appendix A. ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively.

Table 11
Firms Investigated in Low Backlog Periods v. Firms Not Investigated in High Backlog Periods
Investor Reliance on Firm News

DV=	|ea car|	
	(1)	(2)
post restatement * not investigated	**-0.02272*** **	**-0.02141** **
	[-2.65]	**[-2.49]**
post restatement	0.01010	0.00917
	[1.42]	[1.31]
not investigated	0.00565	0.00791
	[0.56]	[0.88]
<u>firm controls</u>		
bad news	0.00384	0.00341
	[0.81]	[0.71]
ln(follow)	0.00099	0.00109
	[0.93]	[1.14]
delay	-0.00010	-0.00011**
	[-1.63]	[-2.02]
lnmve	0.00032	0.00039
	[0.12]	[0.19]
leverage	0.02193	0.00886
	[1.27]	[0.60]
|earnings news|	0.02993	0.02788
	[1.18]	[1.14]
std returns	0.52451***	0.47883***
	[3.62]	[3.43]
<u>restatement controls</u>		
revenue recognition	\	0.01101
		[1.39]
restated time period	\	-0.00000
		[-0.81]
num issues	\	-0.00373**
		[-2.00]
auditor awareness	\	0.00046
		[0.07]
restatement return	\	-0.16014***
		[-3.22]
media tone	\	0.00038
		[1.41]
Constant	0.05745***	0.01123
	[3.64]	[0.58]
Observations	1,660	1,660
Adjusted R-squared	0.076	0.104
Industry FE	Yes	Yes
Qtr FE	Yes	Yes

This table tabulates the result of a difference-in-differences regression [Eq (4)] which regresses the absolute value of the short-window reaction to a firms earnings announcement on an indicator for whether the firm is investigated (*not investigated*) by the SEC after filing a major restatement (i e , stock returns less than -10%) Further we interact this variable with an indicator identifying those earnings announcements that occur in the two-year window after the filing of the restatement, *post restatement* Standard errors are clustered by firm All variables are winsorized at the 1% and 99% levels All variable definitions are provided in Appendix A ***, **, and * indicate two-tailed statistical significance of coefficient estimates at the 1%, 5%, and 10% levels, respectively

Appendix A
Variable Definitions

Variable		Definition
dependent variable		
investigation opened	=	A binary variable set to one if the SEC opens a new investigation into a firm during the (-2, +365) event window where day zero is the filing date of a restatement; zero otherwise.
investigation opened - fraud/disclosure	=	A binary variable set to one if the SEC opens a new investigation into a firm during the (-2, +365) event window where day zero is the filing date of a restatement and the primary classification of the investigation is "financial fraud/issuer disclosure"; zero otherwise.
ln(investigation length)	=	The natural logarithm of the number of days the investigation is opened.
constraint variables		
sec ro backlog	=	The number of open enforcement cases in the SEC regional office that has jurisdiction over the state or geographic area where a restating company is headquartered. Regional office case backlog is measured as of the month end prior to the restatement filing . For example, if a company files a restatement of its financials on April 12, 2006, the case backlog is measured as of March 31, 2006.
average sec office backlog	=	The average number of monthly open cases in the SEC office, that is conducting an investigation into a restating company, over the course of the investigation.
sec hq backlog	=	The number of open enforcement cases in the SEC's home office (i.e., Washington D.C.). SEC headquarter case backlog is measured as of the month end prior to the restatement filing. For example, if a company files a restatement of its financials on April 12, 2006, the case backlog is measured as of March 31, 2006.
geo distance from ro	=	The distance in miles from a company's headquarters to the SEC regional office that has jurisdiction over the state or geographic area. The distance is estimated using company and SEC regional office zip codes and the "zipcitydistance" function in SAS.
restatement control variables		
revenue recognition	=	A binary variable set to one when the restatement relates to a revenue recognition issue, zero otherwise.
restated time period	=	The number of days in the time period restated by the company.
num issues	=	A count of the number of unique accounting rule application failure keys identified in Audit Analytics for each restatement.
auditor awareness	=	A binary variable set to one when the restatement discloses the auditor's knowledge or involvement in the restatement, zero otherwise.
restatement return	=	The market-adjusted stock return during the [-2, 2] day event window where day zero is the restatement filing date from Audit Analytics.

Appendix A
Variable Definitions

Variable		Definition
media tone	=	The average sentiment of all news articles publish about the company during the one-month period after the filing of the restatement. News articles are identified using RavenPack and the ESS is used as the sentiment measure.
<u>firm control variables</u>		
ln(mve)	=	The natural logarithm of a firm's market value of equity as of its most recent annual report before the restatement filing date.
small size	=	A binary variable set to one if a firm's market value of equity is less than $200 million, zero otherwise.
sp500	=	A binary variable set to one if a firm is a member of the S&P 500 as of the end of the month prior to the restatement filing.
leverage	=	A firm's leverage ratio ([long-term debt + the current portion of long-term debt]/ total assets) as of its most recent annual report before the restatement filing date.
btm	=	A firm's book-to-market ratio as of its most recent annual report before the restatement filing date.
firm age	=	The number of years a firm's securities have been publicly traded according to the CRSP header file.
<u>additional sample partition variables (Tables 4, 5, and 6)</u>		
insider sales ratio	=	A measure of the intensity of insider selling by top executives during the misreported periods. We consider any officer with the following title to be a top executive: CEO, President, Chairman, CFO, Chief Operating Officer (COO), Chief Information Officer (CIO), and Chief Technology Officer (CTO). Next, we sum the total dollar value of open market sales made by these top executives and scale it by the total dollar value of open market insider sales and purchases. The data source for insider trading data is Thomson Reuters.
Δ mkt cap	=	The short-window [-2, 2] day event window, where day zero is the restatement filing date, dollar value change in the market capitalization of the company around the restatement announcement.
long window return	=	The six-month market-adjusted buy and hold stock return ending two days after the filing of the restatement.
large losses- restatement return	=	An indicator variable set to one when *restatement return* is in the bottom quartile of the investigated firm subsample (i.e., investigation opened=1) ranked by investigating office; zero otherwise.
large losses- Δ mkt cap	=	An indicator variable set to one when *⊿ mkt cap* is in the bottom quartile of the investigated firm subsample (i.e., investigation opened=1) ranked by investigating office; zero otherwise.
large losses- long window return	=	An indicator variable set to one when *long window return* is in the bottom quartile of the investigated firm subsample (i.e., investigation opened=1) ranked by investigating office; zero otherwise.
$lobbyers_{t-1}$	=	A variable set to one when the restating company incurred U.S. federal government lobbying expenditures in the one-year period prior to the filing of their restatement. Lobbying expenditures are identified in the LobbyView database (https://www.lobbyview.org/); zero otherwise.

Appendix A
Variable Definitions

Variable		Definition
additional investigation variables (Tables 7, 8, and 9)		
AAER	=	A binary variable set to one if one of two things occurs, 1) the firm receives an enforcement action summarized in an AAER during the time the investigation is open, OR, 2) the firm receives an enforcement action summarized in an AAER within five years of the investigation open date. If neither of these occur, then this variable is set to zero.
class action filed	=	A binary variable set to one if one of two things occurs, 1) the firm has a class action lawsuit filed against it during the time the investigation is open, OR, 2) the firm has a class action lawsuit filed against it within five years of the investigation open date. If neither of these occur, then this variable is set to zero. Class action filing dates are obtained from the Stanford class action clearinghouse.
preemptive investigation	=	A binary variable set to one if the SEC opens a new investigation into a restating firm during the one-year period prior to the filing of the restatement by the company, and zero otherwise.
ln(SEC penalties)	=	The natural logarithm of all fines and penalties (including interest) paid by a company and its executives subject to an enforcement action summarized in an AAER. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident.
ln(SEC + DOJ penalties)	=	The natural logarithm of all fines and penalties (including interest) paid by a company and its executives subject to an enforcement action summarized in an AAER. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident. We also add the total amount of DOJ penalties for any DOJ enforcement action in the corporate prosecution registry that occurred during the period beginning one-year prior to the opening of the SEC investigation and continuing a full five years after the opening of the SEC investigation.
individual penalized	=	A binary variable set to one if an individual was assessed a monetary penalty, OR a individual was barred from serving as a director or accountant in the future, OR an individual was the subject of a cease-and-desist order in any associated AAER. Otherwise, the variable is set to zero. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident.
admits guilt	=	A binary variable set to one if an individual or the firm admits guilt in any associated AAER; zero otherwise. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident.

Appendix A
Variable Definitions

Variable		Definition
govt required restructure	=	A binary variable set to one if any associated AAER required the firm to either make a change to its board of directors (e.g., add an independent director) or to its audit committee; zero otherwise. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident.
cooperation	=	A binary variable set to one if any associated AAER noted help from another domestic or foreign regulator; zero otherwise. Because a single misreporting event can result in multiple AAERs, we use the University of Southern California AAER database to ensure that we identify all AAERs that relate to the same underlying misconduct incident.
future outcome analyses variables (Table 10)		
not investigated	=	A binary variable set to one when a firm filing a material restatement is not investigated by the SEC (investigation open=0) and Δ *sec ro backlog* is in the top quartile (biggest increases in backlog). Further, *not investigated* is set equal to zero when a firm filing a material restatement is investigated by the SEC (investigation open=1) and Δ *sec ro backlog* is in the bottom quartile (biggest drops in backlog).
Δ sec ro backlog	=	The change in *sec ro backlog* from two months prior to the most recent month just prior to the firm's restatement filing.
ModJones Acc_{t+1}	=	This a proxy for the firm's level of discretionary accruals during the first full fiscal year after the filing of a material restatement. Abnormal accruals are estimated consistent with Dechow et al. (1995) as the deviations from the predicted values from the following industry-year regression: $Accruals_{it}/Assets_{it-1} = \alpha + \beta_1(1/Assets_{it-1}) + \beta_2(\Delta CashSales_{it}/Assets_{it-1}) + \beta_3(PPE_{it}/Assets_{it-1}) + \varepsilon_{it}$, estimated where there are at least 15 industry peers based on Fama-French 48 industry classifications.

Appendix A
Variable Definitions

Variable		Definition
PM ModJones Acc_{t+1}	=	This a proxy for the firm's level of discretionary accruals during the first full fiscal year after the filing of a material restatement. Abnormal accruals are estimated consistent with Kothari et al. (2005) as the deviations from the predicted values from the following industry-year regression: $Accruals_{it}/Assets_{it-1} = \alpha + \beta_1(1/Assets_{it-1}) + \beta_2(\Delta CashSales_{it}/Assets_{it-1}) + \beta_3(PPE_{it}/Assets_{it-1}) + \varepsilon_{it}$, estimated where there are at least 15 industry peers based on Fama-French 48 industry classifications. Further, the firm-specific residual is matched with that of a peer that had the closest level of lagged return-on-assets in year t-1 and differenced (i.e., performance-adjusted).
FSD $Score_{t+1}$	=	The financial statement divergence score as developed in Amiram, Bozanic, and Rouen (2015) in the first full fiscal year after the filing of the major restatement.
Future restated periods	=	A binary variable set to one if any period starting two days after the filing of a material restatement and continuing for the next two years is subsequently restated; zero otherwise.
Post 2 yr stock return	=	The size-adjusted buy-and-hold stock return starting two days after the restatement and continuing for two years.
<u>additional reaction to earnings announcement variables (Table 11)</u>		
|ea car|	=	The absolute value of the [0,1] market-adjusted earnings announcement return and serves as a proxy for the degree of investor revision of market value based upon the firm's earnings release.
post restatement	=	An indicator set to one for any earnings announcement during the two-year window after the filing date of the material restatement, and set to zero for any earnings announcement during the two-year window prior to the filing date of the material restatement.
bad news	=	An indicator set to one if the earnings news is negative; zero otherwise. For firms with analyst forecasts of earnings for the current quarter "negative" news is consider missing the consensus estimate. For firms without analyst forecasts of earnings for the current quarter "negative" news is considered reporting an EPS number lower than the EPS reported four quarters prior (i.e., seasonal difference is negative).
ln(follow)	=	The natural log of one plus the number of analysts issuing forecasts for the current quarter.
delay	=	The number of days between the earnings announcement date and the fiscal quarter end date.
|earnings news|	=	The absolute value of the reported EPS news scaled by stock price two days before the earnings announcement. For those firms with active analyst forecasts for the current quarter, EPS news is the difference between the I/B/E/S actual EPS and the consensus forecasted EPS. For those firms without active analyst forecasts for the current quarter, EPS news is the seasonal difference.
std returns	=	The standard deviation of daily stock returns during the quarter before the earnings announcement.