Is "Not Guilty" the Same as "Innocent"?
Evidence from SEC Financial Fraud Investigations

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June 2019

The Securities and Exchange Commission (SEC) routinely investigates firms for financial fraud, but investors only learn about regulators' concerns if managers voluntarily disclose news of the investigation, or regulators sanction the firm. We investigate the effects of disclosing investigations using confidential records on all opened investigations, regardless of outcome. Markets exhibit some ability to identify which investigations will eventually lead to sanctions. Nonetheless, even when no charges are ultimately brought, firms that voluntarily disclose an investigation have significant negative returns, underperforming non-sanctioned firms that stayed silent by 12.7% for a year after the investigation begins. Consistent with limited investor attention, disclosing in a more prominent manner is associated with worse returns. CEOs who disclose an investigation are also 14% more likely to experience turnover. Our results are consistent with transparency about bad news being punished, rather than rewarded, by financial and labor markets.

In the legal system, regulators and prosecutors have considerable discretion about which organizations and individuals to investigate. While there are checks and balances to prevent defendants being unfairly penalized by the final outcome of court proceedings (e.g. jury trial, appeals court, etc.), there is comparatively little regulatory accountability associated with beginning an investigation in the first place. However, knowledge of an investigation may create reputational costs for defendants, even if they are cleared of any wrongdoing. Employers routinely ask potential job applicants: "Have you ever been arrested?". For those that have been arrested, but ultimately exonerated, responding "yes" still carries a negative stigma that hampers their employment prospects (Saxonhouse 2004, Saks and McCarthy 2006).[1] Notwithstanding this, in the corporate context, there have been calls by various public figures for regulators to investigate and charge more cases of corporate wrongdoing, even if those efforts would more frequently fail in front of a jury (Eisinger 2017).

In this paper, we study the consequences associated with investors finding out that a firm is under investigation by the Securities and Exchange Commission (SEC). We explore whether greater transparency about such investigations is rewarded or punished in financial and labor markets, even after controlling for whether the firm was eventually charged with any wrongdoing. The foremost challenge for such a study is that one needs access to *all* investigations conducted privately by regulators, not just those which result in sanctions. Through a series of Freedom of Information Act (FOIA) requests, we acquired records of all financial fraud investigations commenced by the SEC from 2002 to 2005, a period chosen so that the investigations have been concluded and the final outcomes are known. We have data not only on the investigations that resulted in enforcement actions against firms, but also the approximately 75% of cases where the SEC privately commenced an investigation, but closed the case without taking any action against the firm or its managers.

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[1] While federal law in the United States does not prohibit about asking about prior arrests records, some states (e.g. Massachusetts) prohibit asking about arrests that did not lead to convictions. Despite state prohibitions, employers often ask for such information (Saks and McCarthy 2006).

We find evidence that firms and CEOs incur significant costs associated with disclosing investigations of financial fraud by the SEC. Our results are consistent with the notion that being known to have faced allegations of fraudulent conduct and being found "not guilty" is considerably worse than if investors never know about the allegations at all. Put differently, whatever rewards firms may gain from transparency seem to be outweighed by the costs of revealing bad news.

We begin our empirical analysis by examining how investors respond to disclosure of SEC investigations. Managers may be reluctant to share news of an investigation because it is likely to be perceived as bad news that will adversely impact their firm's stock price or their career prospects. At the same time, managers also face potential liability concerns from not disclosing an investigation to investors, or may believe investors will reward them for transparency. We find that investors respond negatively to a firm's revelation of being investigated, with average three-day characteristic-adjusted returns of -4.13%. Notably, even firms that disclose but ultimately never face sanctions by the SEC have significant negative returns around disclosure, with average three-day returns of -2.90%.

However, markets show an ability to distinguish which investigations will result in subsequent enforcement actions. Disclosures with eventual sanctions have an average three-day return of -5.95%, or 3.05% worse than disclosing firms without subsequent sanctions. To explore how investors can predict these outcomes, we examine fraud allegations around earnings restatements. Investigations prompted by restatements are a more homogeneous set of events with a clearer measure of the severity of the alleged misconduct (i.e. the magnitude of the restatement). We find that investors' ability to determine which investigations will result in enforcement actions is limited to earnings restatements. Markets show no ability to predict the outcome of other kinds of fraud investigation, despite these being nearly twice as numerous (so the lack of predictability is not from a lack of statistical power).

Firms that do not disclose, unsurprisingly, have zero abnormal returns around the opening of the non-public investigation. However, it is possible that negative disclosure returns do not represent

the cost of public disclosure directly, but merely accelerate bad news that the market would eventually figure out. This could include sanctions at the end of the investigation, as well as costs that will manifest in lower earnings before that time, such as legal fees and the effects of management distraction in responding to the regulatory probe. To examine whether disclosure itself is a negative event, as opposed to merely accelerating bad news, we compare the returns over longer horizons for firms that do and do not disclose. Over time, more information about the costs and outcomes of the investigation will have come to light, regardless of whether firms disclose the investigation itself. We can also control for the severity of the underlying misconduct through a measure of the sanctions. We know not only whether there was enforcement action against the firm or its managers, but also the penalties sought (i.e. civil actions, administrative proceedings, or sanctions only against employees).

We find evidence supporting a negative effect associated with disclosure itself. This is most clearly seen by examining firms with no ultimate enforcement action. Firms that disclose have returns that are significantly lower than firms that do not disclose, being 4.60% lower from one day before opening until one month after (relative to non-sanctioned, non-disclosing firms under investigation). This gap increases to -6.74% at three months, and -12.67% after one year. Only at a two-year horizon is the gap in returns insignificant, though the point estimate is still large, at -9.94%. This increasing gap is difficult to reconcile with disclosure merely accelerating bad news. In this case, disclosing firms would have the expected costs capitalized at once, whereas non-disclosing firms would have the costs materialize gradually over time through lower earnings. This ought to cause the gap between the groups to *shrink* over time, rather than grow up to a one-year horizon.

Patterns in analyst forecast errors support the interpretation that disclosure is not merely accelerating knowledge of short-term direct costs that all firms under investigation will suffer. If these costs, like managerial distraction, are the main drivers of the negative returns, one would expect non-disclosing firms to have negative earnings surprises after the start of the investigation, as the

investigation (which is unknown to the market) results in worse-than-expected earnings. By contrast, analysts of disclosing firms ought to lower their expectations upon disclosure, so forecast errors afterwards should be more positive than for non-disclosing firms. Neither hypothesis finds support in the data. Non-disclosing firms have small, insignificant forecast errors for a year after the investigation opens. There are also no significant differences between the forecast errors of disclosing and non-disclosing firms. This implies that the investigation is perceived as costly due to long run consequences (regulatory sanctions, lost reputation), not because of a direct effect on current earnings.

If firms face lower returns for disclosing SEC investigations even when there is no ultimate enforcement action, it may be because investors do not fully react to information about the underlying events, either through incomplete information or limited attention. While investigation openings are often prominently disclosed, investigation conclusions usually lack a formal declaration of no wrongdoing. We test for limited investor attention by examining whether firms that voluntarily disclose but also obfuscate the information have different returns from those that disclose in a more transparent manner. Firms that disclose in a more prominent medium (e.g. a press release) have significantly more negative returns, up to a year after disclosure, than firms that use a less prominent SEC filing. This is consistent with limited investor attention but is harder to explain by incentives for bare disclosure, as all disclosure types meet legal requirements for liability purposes.

Finally, we explore how disclosure is treated in the CEO labor market. Boards face problems of incomplete information about CEO performance, and may view transparency with investors as signaling greater transparency with the board as well. Alternatively, boards may react to the public pressure from disclosure by terminating the CEO to deflect blame from themselves. We find that CEOs who disclose an investigation are 13.8 percentage points more likely to be terminated within two years. Indeed, disclosure has larger estimated negative effects on employment than actually being sanctioned by the SEC. Interestingly, being investigated is associated with more CEO turnover,

regardless of disclosure *or* outcome. This suggests that boards react negatively to the existence of an investigation, but they react considerably more to the public revelation of the investigation.

Although we have controlled for the investigation outcome and a variety of firm-level controls, disclosing and non-disclosing firms may be different in other uncontrolled-for ways. Indeed, there must be *some* difference driving the choice, so the disclosure coefficients are unlikely to be measuring only the causal effect of disclosure. Rather, our focus is on whether any remaining selection effects are large enough to overturn our main conclusion and make disclosure of an SEC investigation actually a *benefit* for firms (as in Diamond and Verrecchia 1991), or even a neutral decision.

We argue that this is unlikely. Such selection effects must operate over and above the severity of the underlying allegation, returns before the investigation begins, governance, and CEO entrenchment, all of which are explicitly controlled for. The most plausible theories of disclosure, such as governance quality and CEO entrenchment, do not show any ability to predict which firms disclose, and controlling for these measures make the estimated effects of disclosure larger. Indeed, across all our specifications, we are unable to find any evidence of disclosure on net being *rewarded*, even just as a positive point estimate. To posit such benefits requires large offsetting omitted selection effects, whereby disclosing firms, even if never ultimately sanctioned, are revealed to have lower firm value by between 8.4% and 13.5% for reasons other than the disclosure, starting when the investigation opens.

The most straightforward interpretation of our results is that disclosure of possible financial fraud is on net punished by investors and boards, over and above whatever benefits are obtained by greater transparency. This raises the question of why firms would choose to disclose. During the sample period there was considerable legal uncertainty as to whether firms were required to disclose the existence of the investigation as a necessarily material event. Firms' disclosure decisions may be thus driven by the idiosyncratic views of their legal counsel on this question, rather than a belief that disclosure would be otherwise beneficial for the firm. Indeed, public disclosure will not mitigate

sanctions assessed by the SEC. Derivative shareholder litigation associated with SEC sanctions will be reduced only if separating bad news into an initial investigation disclosure and a later sanction disclosure leads to a less negative stock price response than a single, "big bath" disclosure of the ultimate sanction. Yet if disclosure reduces litigation damages and markets understand this, there should be some future horizon once all news is revealed when disclosure is associated with higher firm value. Instead, even at horizons of two years, disclosure is associated with large, negative returns.

Our findings are consistent with regulatory investigations creating a stigma that attaches to firms and managers, even if they are ultimately exonerated. This builds on findings that firms and managers suffer reputational costs from fraud (Karpoff et al. 2008a, Karpoff et al. 2008b), though in some cases managers can also personally benefit from corporate malfeasance (González, Schmid, and Yermack 2019). While our main finding is about having action brought, rather than an actual penalty being applied, the broader lesson holds: being found not guilty is worse than not being charged in the first place. We discuss the policy implications for disclosure regulations at the end of the paper.

Our paper contributes to the broader literature on voluntary disclosure, where managers disclose more information than they are legally required to (Balakrishnan et al. 2014). While managers are reluctant to disclose bad news (Hong, Lim and Stein 2000; Kothari, Shu, and Wysocki 2009; Baginski et al. 2018; Bao et al. 2018), litigation concerns can prompt disclosure (Skinner 1994, Donelson et al. 2012) and may lead managers to release bad news in one go, the so-called "big bath" theory (Healy 1985). Our analysis suggests a possibility not widely considered in this literature – that managers in some instances may be *not reluctant enough* when it comes to disclosing bad news.

Our study also contributes to the literature seeking to predict financial fraud. One concern in studying factors that predict financial misreporting is that researchers only normally observe the joint outcome of a firm engaging in fraud and regulators' ability to sanction the firm for the misconduct (e.g. Beneish 1999, Dechow et al. 2011). We find that approximately 75% of firms that regulators

believe to have potentially engaged in fraud, as evidenced by an investigation, do not actually lead to sanctions. Of these investigations, 46% are never revealed at all. The current sample allows for new insights into the factors that prompt regulatory scrutiny for misconduct.

2. Background on Fraud Investigations and Data

2.1 The Mechanics of SEC Investigations into Allegations of Financial Fraud

A number of regulatory and enforcement bodies in the United States investigate allegations of financial misreporting. While these different bodies often coordinate their efforts and sometimes concurrently investigate firms, the Department of Justice (DOJ) Fraud Section focuses on criminal allegations and the SEC focuses on civil allegations. Depending on the severity of the misconduct, firms can face both civil and criminal charges for fraudulent financial reporting. Allegations of fraud that draw regulatory scrutiny arise from various sources including media reports (e.g. Miller 2006), tips provided to regulators (e.g. Dyck et al. 2010), and referrals from other federal and state agencies.

When the SEC receives an allegation of financial fraud, SEC staff consider the merits of the allegations. To the extent that information is credible but further inquiry is needed to examine the validity of the claim, SEC staff open a "Matter Under Inquiry" (MUI). The threshold for opening a MUI is low, as such inquiries are viewed as preliminary and part of a broader assessment of whether devoting resources needed for an investigation would be warranted. After engaging in a MUI, SEC staff determine whether to turn the MUI into an investigation. The threshold for opening an investigation is based on whether the staff believe there is a violation of the federal securities laws and whether the magnitude of the violation, size of the victim group, and the amount of losses merit the attention of the enforcement staff. In some circumstances where the preliminary evidence is sufficiently strong, SEC staff forgo opening a MUI and directly open an investigation.

During the initial period of an investigation, SEC staff are involved in fact-finding. Normally, this involves requesting documents from the firm and interviewing individuals connected with the

organization. Depending on the extent of the firm's cooperation with the investigation, the SEC can utilize its subpoena powers to acquire the desired information. If SEC staff believe an enforcement action is merited, firms are routinely given a chance to respond by the SEC sending a "Wells Notice" to the company. After evaluating the firm's response and deciding that there is likely merit in seeking to sanction the firm, enforcement division staff present the case to the Commission, who privately vote whether or not to pursue an enforcement action against the company or individuals.

Enforcement proceedings can take on two forms. Civil actions are complaints filed in federal court seeking a sanction against the firm. In addition to seeking an injunction against the party, the SEC can also seek monetary penalties and/or disgorgement. Individuals who violate the orders of the court can be subject to additional fines and imprisonment. The SEC can also seek sanctions through administrative proceedings. The SEC presents its complaint to an administrate law judge who hears the arguments. Unlike in civil court cases, administrative law judges are both confirmed and compensated by the SEC. While technically independent, commentators have argued that the in-house nature of the administrative judges offers the SEC a "home court" advantage, allowing the SEC to more easily prevail against defendants (Eaglesham 2015).

SEC enforcement investigations focus on deceptive conduct including delinquent filings, insider trading, market manipulations, and financial fraud related to disclosure of issuers. Financial fraud investigations, which we focus on, are among the most significant types of investigation for the Commission, in both number and penalties sought. They consume considerable financial resources and management time for those being investigated. If found in violation, sanctions for defendants are also significant (e.g. monetary penalties, cease and desist orders, suspension or revocation of licenses). As with all its investigations, SEC financial fraud investigations are conducted confidentially.[2] The

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[2] The confidentiality of investigations is a deliberate part of the SEC process. In the SEC's description of "How Investigations Work," the SEC explicitly notes that "all SEC investigations are conducted privately" (https://www.sec.gov/enforce/how-investigations-work.html).

investigation is known only to a firm's leaders and advisors (e.g. attorneys, forensic accountants) until the SEC formally charges the firm, or the firm discloses the existence of the investigation.

2.2 Data on SEC Financial Fraud Investigations

Data on financial fraud investigations initiated by the SEC were provided under the FOIA. The agency provided us data on the name of the company/individual in each investigation, and the opening and closing dates of each investigation from 2002 to 2005. We were also given data on whether the investigation resulted in an enforcement action and what type of enforcement action the firm or individual faced. Our data ends in 2005 because the SEC is not permitted, by law, to share ongoing investigations and, through discussions with the SEC, this time frame allowed them to provide an effectively complete set of financial fraud investigations.[3]

For each investigation, we examine whether the firm publicly disclosed the investigation and the first date of that disclosure. We searched both regulatory filings (e.g. 10-K, 10-Q, 8-K) and public news releases. We searched beginning one year prior to the SEC investigation opening to account for the fact that some firms publicly announce the SEC's interest before the SEC actually opens a formal investigation. We also search for disclosures up to one year after the SEC case file is closed to find any firms that delay disclosure until after the resolution is known conclusively (e.g. the firm could make a 10-K disclosure up to a year after the investigation concludes). For press releases, we used the Factiva database, and for regulatory filings and conference calls we used the SeekEdgar database.

We began with the action cases under the expectation that all firms with an enforcement action for financial fraud disclosed that action.[4] Firms used a wide set of language to disclose investigations often without explicitly using the phrase "an SEC investigation." By building a search string based on

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[3] Even as of early 2014, there were 16 financial fraud investigations initiated during 2002-2005 that were ongoing in some manner. Studying this early period avoids introducing considerable selection (e.g. closed vs. on-going) into our analysis.
[4] Specifically, as long as the company remained an independent public going concern (e.g. did not go bankrupt, delist), firms would disclose the SEC enforcement action at some point in time.

these cases, we ensured that we built a sufficiently comprehensive set of search terms to find disclosures for firms with no enforcement action against them.[5] We then manually read through the disclosures to ascertain the first date of disclosure. As we sought the first date of public disclosure of an SEC investigation, we excluded investigations by other government agencies (e.g. "InterMune, Inc. (Nasdaq: ITMN) announced that it received a subpoena from the U.S. Department of Justice (DOJ)…"), internal investigations that were not SEC investigations (e.g. "OptiCare Health Systems, Inc. (Amex: OPT) announced today that it has conducted a preliminary review of the classification of its long term debt in its previously reported financial statements for the year ended December 31, 2003…."), and internal investigations where the company engaged in an investigation and informed the SEC but did not disclose interest from the SEC (e.g. "The Company has informed the staff of the SEC of its internal investigation and plans to keep the SEC informed of its progress").

Our readings of disclosures indicated that many firms refer to the SEC investigation vaguely through other language (e.g. "cooperating with the SEC," "a probe by the SEC") or say that the SEC is conducting an informal inquiry, despite the formal investigation being well underway. For example, Ingram Micro issued a press release in October 2004 stating "[I]n other matters, the company received an informal inquiry from the U.S. Securities and Exchange Commission (SEC) during the third quarter. The SEC did not provide a specific reason for the inquiry." However, a formal investigation of Ingram Micro had been underway since May 2004, so Ingram Micro mischaracterized the SEC case as an inquiry when in fact it was an investigation. For each disclosure, we record the date of the release, the source (e.g. press release, 10-K), and the text around the statement disclosing the investigation.

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[5] Our final search string sought to find "SEC" or "Securities and Exchange Commission" within twenty words of inquir*, investigat*, wells notice, settlement, informal, subpoena, probe, cooperat*, complaint, subpoena. The * indicates a variable suffix. We did not include the twenty-word restriction in the Factiva searches (we simply used "and"), as the word restriction was not a function supported effectively by Factiva (i.e. it would erroneously generate errors).

2.3 Details of Investigation Sample

Table 1 presents details of the investigations. Out of the 3,309 total possible securities violations investigated by the SEC between 2002 and 2005, 971 or 29.3% related to financial fraud. All but 16 of these investigations had been concluded as of Fall 2013 when the FOIA request was fulfilled.[6] When we remove investigations into individuals only (n=47) and investigations where the targeted firm was not publicly traded (i.e. on CRSP) as of the open date of the investigation (n=290), we are left with the final sample of 618 investigations into 587 unique firms.

Panel B shows the breakdown of these investigations by the results of the investigations and by disclosure. Out of the 618 total investigations, only 25% (n=156) resulted in enforcement actions. The SEC routinely opens investigations into companies that ultimately are not sanctioned because the SEC learns that the company did not engage in the alleged behavior, or regulators fail to collect sufficient evidence for an enforcement action. Within these 156 investigations with enforcement actions, there were 202 separate actions. 40% of investigations (n=62) involved a civil enforcement action in federal court, and 47% (n=74) involved administrative proceedings. Because some investigations involve multiple enforcement actions and the SEC sometimes sanctions a firm with both civil action and administrative proceedings, these two categories are not mutually exclusive. Finally, 21% of investigations (n=32) resulted in action (civil or administrative) only against employees of the firm, not the firm itself. These cases usually involved officers of the firm as the target of such actions. We classify these as involving an action, but also split out the categories of enforcement action.

Panel C also shows the breakdown of investigations according to whether they were disclosed to the public.[7] As sanctions by the SEC nearly always constitute a material event, eventually all action

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[6] As noted previously, by law, FOIA does not provide information that can interfere with an ongoing investigation. In an indication of how long some investigations take, these sixteen cases were ongoing for more than eight years on average.
[7] During the sample period, there was no consensus on whether SEC investigations or Wells Notices were viewed as a material event in its own right that necessarily needed be disclosed to investors. In 2012, the court ruled in *Richman vs. Goldman Sachs* that government investigations are not legal proceedings that necessarily need to be disclosed to investors.

firms that continue to publicly trade disclose the investigation or settlement. In our sample, 96% or 149 of 156 investigations that resulted in an enforcement action were disclosed by the firm. Of the 7 cases where firms did not disclose, 5 firms delisted prior to the conclusion of the investigation, and 4 firms faced enforcement actions against only its managers, rather than the firm itself.

We are primarily interested in firms that disclose the existence of an investigation without knowing the outcome (e.g. prior to settlement with the SEC or formally facing a civil action). To the extent that the firm discloses at least one week before date of the earliest action taken by the SEC against the firm (or, for individual-only sanctions, the earliest action against an individual), we assume that the firm did not know with certainty the outcome of the SEC's probe, and so we deem these disclosures to be voluntary.[8] In addition, all disclosures by firms where there was no action are deemed voluntary. This results in 317 total voluntary disclosures, or 51.3% of all investigations. Out of these, 130 investigations with voluntary disclosures resulted in actions (83.3% of the 156 action investigations), and 187 investigations with voluntary disclosures resulted in no action (40.5% of the 462 no-action investigations). Of the voluntary disclosures, 162 (51.1%) were in a press release, 53 (16.7%) were in a 10-K SEC filing for an annual report, 51 (16.1%) were in a 10-Q SEC filing for a quarterly earnings report, 81 (25.6%) were in an 8-K SEC filing, 8 (2.5%) came from a leak, 7 (2.2%) were in a conference call, and two came from other sources (i.e. foreign companies that filed with the SEC, for example in a Form 6-K). The percentages do not add up to 100%, as some companies simultaneously both issued a press release and filed an 8-K form with the SEC.

Table 2 presents summary statistics for firms under investigation. Firms under investigation have typically performed poorly, with an average return on assets of -3.43%, and a one-year characteristic-adjusted return of -14.85% prior to the opening of the investigation. The latter is

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[8] By voluntary, we do not exclude the possibility that attorneys for the firm determine that the likelihood of a settlement is material matter thereby prompting disclosure.

calculated as in Daniel, Grinblatt, Titman, and Wermers (1997) as the stock return minus the returns of a portfolio in the same NYSE quintile of market capitalization, book-to-market ratio, and returns from 2-12 months ago (momentum). In Panel B, we compare the difference between action and no-action firms. We find no significant differences at the investigation opening in market capitalization, return on assets, book to market ratio, or how long the CEO has been in the job. However, firms with actions have significantly lower adjusted returns in the year before the investigation, by -16.3% (with a *t*-statistic of -3.59, when clustered by firm and date). To understand the differences between disclosing and non-disclosing firms, we consider the determinants of disclosure in detail below.

3. Analysis

3.1 Characteristics of Disclosure Decisions

We begin by examining the factors associated with whether firms voluntarily disclose the existence of an investigation. We consider market capitalization, various measures of recent firm performance and valuation (one-year characteristic-adjusted stock return, log book-to-market ratio, return on assets), measures associated with potential governance and investor expectations management (accruals, as in Sloan 1996; the Governance 'G' Score from Gompers, Ishii, and Metrick 2003; use of an external investor relations firm from Solomon 2012), and measures associated with the CEO's position (log of CEO tenure, a dummy variable for whether the CEO was present in the two years before the opening of the investigation, and a dummy variable for whether the CEO was older than 65 at the time of the investigation opening). As a dependent variable, we consider a dummy variable for whether the firm voluntarily disclosed the existence of the investigation.

These results are presented in Table 3 Panel A. In univariate specifications, only firm size, lagged returns, and investor relations firm use are significantly related to disclosure. The coefficient on log market capitalization is 0.021, with a *t*-statistic of 2.20 when clustered by firm and date. In terms of magnitude, a one standard deviation increase in log market cap (2.21) increases the probability of

voluntary disclosure by nearly 5 percentage points, relative to an unconditional probability of 0.51. Using an Investor Relations firm is associated with increased probability of voluntary disclosure of 13 percentage points, with a *t*-statistic of 2.94. A one standard deviation increase in lagged returns decreases disclosure probability by 5 percentage points, with a *t*-statistic of -2.43. Neither firm size, lagged returns nor IR firm use remain significant in multivariate regressions with all controls. Only book-to-market is significant after including other firm controls, though it is insignificant in a univariate setting. A one standard deviation increase in log book-to-market increases the probability of voluntary disclosure by 12.3 percentage points.

In Panel B, we repeat the analysis with controls for whether there was subsequently an action taken against the firm. It is not clear how well firms themselves know the likelihood of a sanction occurring. Nonetheless, if firms do have such private knowledge (e.g. based on their conversations with the SEC and their attorneys or the level of misconduct), then the ex-post outcome is likely to be correlated with this ex-ante private information. We are primarily interested in whether controlling for this changes the relations in Panel A. The results show that while ex-post action is related to disclosure, controlling for this does not change the effect of other variables significantly. The only exception is past returns, which show no relation to disclosure after controlling for subsequent actions.

In many ways, the results in Table 3 are most striking for what they do not show. Most standard theories for voluntary disclosure find little support in the data. The decision to disclose is not strongly related to measures of firm governance or CEO entrenchment (as found in Irani and Oesch 2013). Other measures of CEO incentives also show little explanatory power – whether the CEO was present for the two years before opening (a proxy for being present during the fraud itself), or whether the CEO is above 65 (and so may hope to delay disclosure until after they retire). Disclosure does not line up with simple principal/agent predictions, whereby CEOs disclose in ways that benefit themselves, but at a cost to their firms.

While the list of traits is not exhaustive, the fact that most traits show no significant association with disclosure supports the conclusion that disclosing and non-disclosing firms look fairly similar, more so after controlling for the existence of subsequent enforcement action. Variables related to disclosure tend to vary in magnitude and/or significance depending on which controls are included. The main exception is the strong association between subsequent action and disclosure. This highlights the importance of controlling for enforcement when interpreting effects of disclosure. The interpretation of the coefficient is unclear, however. Disclosure may signal greater cooperation with the SEC. While cooperation is explicitly stated by regulators as being rewarded, Files (2012) suggests that for earnings restatements, cooperation is associated with a higher likelihood of SEC sanctions against a firm.[9] In other words, cooperation may reduce penalties after a firm is found liable, but increase the probability of action being taken, by making it easier for investigators to establish guilt or liability. An alternative is a selection explanation, whereby firms with greater private information that they will be subject to sanction may be more likely to preemptively disclose the investigation, perhaps to help mitigate subsequent market impact (a notion we examine later in more detail).

3.1 Returns around Disclosing Fraud Investigations

Next, we turn to the effects of disclosure on stock market returns. While news of an SEC investigation is negative, this may be offset by the firm's transparency in the disclosure being considered good news. To examine the market's response to disclosing a fraud investigation, we examine three-day characteristic-adjusted returns around a firm's disclosure of an SEC fraud investigation. The dependent variable is the returns from one day before the disclosure to one day after, minus the returns on a portfolio matched on market capitalization, book-to-market, and momentum (Daniel et al. 1997). We regress these on dummy variables for the existence and nature of

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[9] The Securities and Exchange Commission (Division of Enforcement) *Enforcement Manual* describes the benefits of cooperation. Specifically, the title of Section 6.3 of the manual is even titled "Publicizing the Benefits of Cooperation."

subsequent investigations – a dummy variable for any action, and variables for a civil action against the firm, an administrative action against the firm, and actions only against individuals. While the window of returns is too short to be much affected by other variables associated with the cross-section of stock returns, we nonetheless include as controls other variables associated with stock returns generally and/or the disclosure choice in Table 3 –log of market capitalization, accruals, the log book-to-market ratio, and the return on assets (all but the first taken from the most recent prior fiscal year).

We present these results in Table 4. The average three-day characteristic-adjusted return is large and negative, at -4.13%. In this regard, SEC fraud investigations are viewed by the market as being significant bad news. In Column 1, we regress these returns on the *action* dummy and find that the market shows a significant ability to determine within three days which investigations are likely to lead to subsequent enforcement. Disclosures with subsequent enforcement have returns that are 3.05% lower, with a *t*-statistic of -2.33 when clustered by firm and date, as shown in the coefficient on *action*. However, the magnitude of the constant in this regression is also informative as to the overall level of returns, particularly as these are short-window returns that already control for market-wide movements and common determinants of expected returns. The constant is -2.90, with a *t*-statistic of -4.89, meaning that firms that have no ultimate action taken against them have a return of -2.90% when they disclose the existence of the investigation. This is consistent with either markets being imperfectly able to determine at disclosure which investigations will result in subsequent actions, and/or pricing in the fact that even investigations with no enforcement action are still costly for firms (e.g. legal fees in defending against the allegations, management distraction from running the firm, reputational cost). In Section 3.2, we examine which kinds of costs might explain the returns.

In column 2, we split actions into those with subsequent civil action, administrative proceedings, and individual-only sanctions. There are more negative returns for administrative proceedings (-3.59%), and directionally but insignificantly negative returns for other sanctions (-2.48%

for civil, -0.96% for individual only). In columns 3 and 4, we also control for additional firm characteristics. While the number of observations drops from 299 to 217 due to the additional controls requirements, the patterns are similar, with subsequent action still being associated with significantly more negative returns. With additional controls, civil action is marginally significant and larger in magnitude (-3.69%), consistent with civil actions generally being more serious than administrative actions. Investigation disclosures are negatively related to log market capitalization, suggesting that markets judge the consequences of investigations to be worse for small firms than for large firms. A one standard deviation increase in log market capitalization (2.21) is associated with more positive (i.e. less negative) announcement returns by 1.67% and 2.15% in columns 3 and 4, respectively.

To the extent that markets appear to anticipate the ultimate consequences of the SEC's fraud investigation (i.e. by reacting more negatively ex-ante to firms that ex-post face sanctions), we seek to understand what information facilitates investors' ability to ex-ante distinguish these disclosures. To this end, we examine firms that face fraud allegations in conjunction with earnings restatements. This sample is useful as we can investigate a more homogenous type of alleged financial fraud and have a proxy for the perceived severity of the alleged misconduct (i.e. the magnitude of the restatement). By examining allegations of fraud arising from earnings restatements, we can also include additional controls from Files (2012) for the number of accounting issues raised, the size of the provable loss, a dummy variable for the existence of future litigation, and the magnitude of the restatement.

In Table 4 Panel B, the restatement sample shows a large ability of markets to distinguish subsequent action firms from non-action firms. The difference in announcement returns is 5.41% with a *t*-statistic of -2.58, despite having only 103 observations (around a third of the Panel A sample). In addition, the different types of action show large and negative effects: -6.73% for civil actions (*t*-statistic of -2.16) and -4.87% for administrative actions (*t*-statistic of -1.69). The results are slightly weaker with additional firm-level controls. Out of the restatement-level controls, only the restatement

magnitude shows a significant effect on disclosure returns (with the positive coefficient indicating that negative restatements receive negative returns). In Panel C we examine the non-earnings-restatement financial fraud sample. The market shows no significant ability to determine on average which disclosures will result in subsequent actions when the alleged misconduct is not linked to an earnings restatement. Point estimates for the action coefficients are also considerably smaller. By contrast, the effects of market capitalization are positive and significant in this sample.

These results suggest that markets interpret announcements of SEC fraud investigations primarily through the hard information provided by an earnings restatement event. For other, more idiosyncratic types of financial fraud, returns show less relationship to the likelihood of enforcement, but instead are related to the size of the firm, with investigations of small firms being viewed as costlier.

3.2 Disclosing versus Non-Disclosing Firms

While firms that voluntarily disclose the existence of an investigation tend to have negative returns around the announcement itself, it is unclear whether the disclosure merely brings forward news that the market would eventually realize regardless. This could include both the investigation itself, and the underlying events being investigated. Indeed, if the lack of subsequent action is interpreted as indicating no wrongdoing, there is a reasonable argument that disclosure should ex post increase stock prices, as greater transparency reduces information asymmetry between insiders and outsiders (Diamond and Verrecchia 1991).

We examine longer-window returns to understand if disclosure is merely accelerating bad news. To keep the window and information set approximately comparable, we center observations around the investigation opening date, and study characteristic-adjusted returns from one day before opening to horizons up to two years (504 trading days). Our dependent variable is a dummy variable for firms that make a voluntary disclosure between one day before the investigation opening and 504

days after opening.[10] The excluded category is firms that do not disclose voluntarily at any point. For these tests, we exclude firms that either disclose involuntarily, or that disclose voluntarily outside the (t-1, t+504) window. Of the firms that voluntarily disclose, 63% do so within this window.[11] Including the remaining firms among the non-disclosers (given they were non-disclosers over the period in question) does not substantially change the results.

We present these results in Table 5. In Panel A we consider all investigations and do not control for the outcome of the investigation, so any determinants of the disclosure choice are not controlled for. These results serve as a benchmark to compare how much controlling for the ex-post outcome (in Panels B, C, and D) affects the magnitude of the coefficients. If disclosure choice is related to firms' ex-ante private information about the likelihood of enforcement or its expected severity, then controlling for the ex-post outcome (both in terms of existence and type) should significantly alter the estimated effect of disclosure. As a consequence, Panel A is primarily interesting as a comparison to the more important (and less endogenous) results in Panel B, C, and D.

With these caveats, voluntary disclosure without any controls is associated with negative returns up to a two-year horizon. In Column 1, for returns between one day before and 20 days after investigation opening, we find that firms that voluntarily disclose have characteristic-adjusted returns that are 3.56% lower, with a *t*-statistic of -2.85. In column 2, when we extend the horizon to 60 days afterwards, the difference in returns is -7.82%, with a *t*-statistic of -4.05. At 120 days the difference is -8.70% (with a *t*-statistic of -3.53), and at a one-year horizon the gap in returns has increased to being 11.50% lower, with a *t*-statistic of -2.43. Only at a horizon two years after investigation opening is the gap in returns insignificant, though still large in magnitude at 12.54% lower.

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[10] The results are similar if the period for disclosure is extended to include up to 60 days before the investigation. Some firms disclose in this time, when the issue may be in the "matter under inquiry" stage. However, including these cases runs the risk of reverse causality, whereby bad news and negative stock returns cause the SEC to launch a formal investigation.
[11] Of the remaining voluntary disclosures, 92 occurred before the SEC investigation started, and 24 occurred afterwards.

The increasingly negative returns out to a one-year horizon partly reflect the fact that as the horizon gets extended, more and more of the disclosing firms have made their disclosures by this point. In this way, the set of disclosing and non-disclosing firms is the same in all regressions. If instead, the *disclose* variable only equals one for firms that have disclosed up to that point, the effects are somewhat stronger (untabulated), consistent with disclosure itself being the source of bad news.

We next control for the possible effects of private information in the disclosure choice by conditioning on the ex-post outcome of the investigation. In Panel B, we consider one relatively easy-to-interpret counterfactual: we condition only on firms that faced no subsequent enforcement action. Over a long enough horizon, the market presumably will be able to identify that all these firms will not have any action against them, and in an efficient market, the underlying events that form the basis of the investigation will come to light, either directly, or through their effects on firm earnings.

We find that in this sample, the estimated effects of disclosure are similar to the version without controls. After 20 days, firms that voluntarily disclose have characteristic-adjusted returns that are 4.60% lower, with a *t*-statistic of -3.34. In column 2, at 60 days after investigation opening, disclosing firms have adjusted returns that are 6.74% lower, with a *t*-statistic of -3.04. At 120 days, the effect is 7.78% lower, with a *t*-statistic of -2.80, and at a one-year horizon, disclosing firms' returns are 12.67% lower, with a *t*-statistic of -2.41. Like before, two years after investigation opening the gap in returns is insignificant, though still large in magnitude at 9.94%. The fact that in the sample of non-charged firms, the estimated effects of disclosure are similar to before gives some support to the idea that the results are not driven by private information about the likelihood of action against the firm.

By contrast, firms that fail to disclose do not have significantly negative returns around the opening of the investigation, as seen in the insignificant constant in the regression at all horizons. In untabulated results, the estimated adjusted returns in a very short window around investigation

opening dates (t-1: t+1) are very close to zero and statistically insignificant, indicating that the opening of the investigation is not being leaked to the market.

In Panel C, we again consider both action and non-action, but include controls for the existence and type of subsequent enforcement action. The results are slightly smaller in magnitude than those in Panel A, but still large and significant. Firms that voluntarily disclose the investigation have returns up to one, three, six, and 12 months that are lower by 2.81%, 5.44%, 6.86% and 8.43%, respectively, with all being significant at a 5% level or better (except at 12 months, where the difference is significant at a 10% level). At a two-year horizon, the gap shrinks to 6.86% and is again insignificant.

The Panel B and C estimates contain perfect foresight about the nature of the investigation, so it is unlikely that firms know *more* about the likely outcome than the regression controls for. There still may be endogeneity related to fixed firm characteristics about the kinds of firms that disclose. We consider this question in Panel D. The tests are the same as those in Panel C, but we now include additional firm-level controls for variables related to disclosure in Table 2 – log market capitalization, accruals, log book-to-market, return on assets, log CEO tenure before investigation opening, and characteristic-adjusted returns from 252 days before investigation opening to two days before investigation opening. With these additional controls, the estimated effect of disclosure gets *larger* than in Panel C. Indeed, the magnitude of the coefficients with firm and investigation outcome controls included is closer to that in Panel A, with disclosure being associated with returns that are 13.50% lower after one year, and significantly lower by 19.48% (*t*-statistic of -2.09) after two years. These magnitudes, while very large, are consistent with Karpoff et al (2008b)'s estimate of returns around disclosure of formal regulatory investigations of -13.74%. Crucially, existing papers lack the comparison group of firms being investigated who do not disclose the investigation.

Again, these controls do not address all potential confounding factors. However, it is noteworthy that adding the controls in question does not reduce the estimated effects of disclosure –

investigation controls reduce the estimated effect somewhat, but firm level controls increase it. More importantly, there is no evidence that firms that disclose the existence of an investigation are ever *benefitted* at any horizon up to two years. The point estimate, though not exogenous, is very large and negative. If one posits that information asymmetry means disclosure *is* being rewarded in this market, then one must believe either in very large selection effects that are somehow offsetting this, or that markets have not updated sufficiently on the true state of the world at a horizon of one to two years.

3.3 Testing for Direct Costs

We next test a related aspect of the hypothesis that capitalized costs of the investigation drive the negative effects of disclosure. Such costs would include direct costs like legal fees, as well as indirect costs like the effects of managers being distracted and making worse decisions. The key notion is that these costs will be borne by firms under investigation, regardless of whether they disclose or not. Importantly, firms that do not disclose the investigation will be suffering these costs, but markets will not know about it until the costs materialize in lower earnings. It also seems possible that since the reason for the distraction is not known, analysts may be slow to update on the source of the greater costs, leading potentially to a series of worse-than-expected earnings surprises.

By contrast, consider the effect of disclosure on earnings surprises. Once analysts become aware of the investigation, the costs ought to be taken into account, which would lower expectations of future earnings at that time. However, when lower earnings materialize, they should not be a surprise. As a result, firms that disclose the investigation ought to have more positive surprises than firms that do not disclose, assuming that these costs are economically significant. However, if the negative returns from disclosure are due to longer-run costs like lost reputation (Karpoff 2012) or penalties at the end of the investigation, there should not be an effect of disclosure on *current* earnings.

We test this question by examining analyst forecast errors after the opening of the investigation. We use the Institutional Brokers' Estimate System (IBES) database and consider the

median forecast of quarterly earnings per share, using the latest forecast by each analyst made between 90 days before and three days before the announcement. These are scaled by the stock price three days before the investigation opening. We consider the first four announcements after the opening of the investigation and test the two predictions above: whether average forecast errors are negative for firms that do not disclose, and whether forecast errors are significantly different for disclosing firms.

The results are presented in Table 6. Analyst forecast errors over the four announcements after investigation opening are regressed on a dummy variable for voluntary disclosure, with standard errors clustered by firm and date. The first question is whether non-disclosing firms have significantly negative forecast errors, seen in the regression constant. All constants are insignificantly different from zero, with the largest t-statistic being -1.22 for the first announcement. The point estimate on the second announcement is actually positive. All the estimates are also small in magnitude, indicating that the lack of significance is not merely a lack of statistical power. The largest negative effect, of -0.151 for the first announcement, is only 0.083 standard deviations of the forecast error variable, with the others being smaller, at 0.03, -0.002, and -0.006 standard deviations, respectively. In other words, there is very little evidence that analysts are negatively surprised for non-disclosing firms under investigation.

Second, there is no evidence the firms that disclose have more positive earnings surprises. The coefficient on the disclosure dummy is small, of inconsistent sign, and statistically insignificant. The largest t-statistic is actually negative, at -1.31 for the second earnings announcement, and the largest positive t-statistic is 0.79 for the fourth. The estimated effects of disclosure amount, in terms of standard deviations of forecast error, are -0.096, -0.115, 0.020, and 0.072.

These results suggest that the main costs of the investigation are not coming from the immediate effect of the investigation on current earnings, either through direct or indirect costs. Rather, the negative reaction of the market appears to be related to estimates of future costs of the investigation, either in terms of stigma for the firm or sanctions applied at the end of the investigation.

3.4 Obfuscating Fraud Investigation Disclosures

One potential reason why disclosure may be detrimental, even over long horizons and after controlling for investigation outcomes, is limited investor attention. Investors may be inattentive to the details and impact of potential firm problems without the dramatic information that the SEC has become involved. In this view, the SEC investigation colors perceptions of the firm in a negative light, even if the subsequent investigation does not lead anywhere. Importantly, there is an asymmetry in that investigations openings and actions are prominently announced, whereas there is often no disclosure at all that an investigation has been concluded without action being taken. If investors are inattentive to the latter event, the prominent investigation disclosure may have long-lasting effects.

The main alternative, however, is a selection effect – firms that disclose do so because they have private information about the investigation, and the estimated effects of disclosure are proxying for differences in the underlying firm events, or the firms themselves. Out of these potential sources of endogeneity, one of the most obvious relates to potential legal liability. Even if the firm does not ultimately face sanctions by the SEC at the end of the investigation, if news of the investigation leaks out, shareholders may sue the firm for not disclosing the potential bad news in a timely manner.

To the extent that a firm seeks to mitigate potential liability for not disclosing the investigation in a timely manner, disclosure may be advantageous. However, the potential reduction of liability can be achieved regardless of how prominently the firm discloses the investigation. Whether the investigation is disclosed prominently in a press release or buried within an 8-K filing, the legal benefits associated with disclosure are the same. By contrast, if limited investor attention contributes to the investor response, we would expect more negative responses to more prominent disclosures.

To investigate the potential effects of less prominent disclosure of fraud investigations, we examine the effects of how much the firm obfuscates the disclosure. First, we consider the prominence of the medium. If the disclosure occurs through more prominent and attention-grabbing mediums,

which we define as press releases, conference calls, and leaks, then we predict that returns will be more negative than for less prominent mediums like SEC filings (10-K annual reports, 10-Q quarterly reports, 8-K filings, etc.). Second, firms choose different types of language to describe the SEC's involvement. If a firm uses the correct description that they are under "investigation" by the SEC, this may be viewed differently than if the firm uses euphemistic language such as "inquiry" or "discussions with the SEC." We create a dummy variable equal to one if the firm fails to use the word "investigation" in its disclosure of the SEC's fraud investigation.

In Table 7, we examine the effects of obfuscation on disclosure returns. The dependent variable is characteristic-adjusted returns from one day before disclosure until various horizons afterwards, from one day until 252 days. The longer horizon relative to Table 4 is examined to check whether any obfuscation effects are short-lived, or whether they resemble the return differences in Table 5. Additional controls are included for the subsequent outcome of the investigation.

At a short horizon of three days, disclosing in a less prominent medium is associated with characteristic-adjusted returns that are 2.86% higher, with a *t*-statistic of 2.55. By contrast, failing to describe the investigation candidly is not associated with significantly higher returns, though the point estimate is positive. Disclosing in a less prominent medium continues to be associated with significantly more positive returns out to a one-year horizon, with a growing gap over time of 4.81% after 20 days, 6.95% after 60 days, 7.18% after 120 days, and 13.17% after 252 days, all significant at the 5% level or better (except at 120 days, which is significant at the 10% level).

These results are consistent with limited investor attention, but harder to explain by disclosure being driven by a firm's knowledge of the severity of the misconduct. For this to explain the findings, firms must be taking a decision to disclose more prominently when they know they face worse problems, even though there are no legal benefits to doing so. This notion seems psychologically less plausible, particularly since more prominent disclosure confers no legal advantage on the firms.

3.5 CEO Tenure and Fraud Investigation Disclosures

While the prior analyses are consistent with disclosure of fraud investigations being punished by financial markets, it is a separate question as to how transparency is treated in executive labor markets. In particular, the board will be aware of the investigation, regardless of whether any public disclosure is made. In this sense, if disclosure matters for CEO outcomes, it is not due to knowledge of the investigation itself, but is more likely either due to the perception of transparency, or public pressure. If boards have imperfect knowledge of how CEOs are performing, transparency with investors may be viewed as a signal about similar transparency with the board itself (for instance, if honesty or openness is viewed as an innate personality trait). However, self-interested board members are likely to suffer themselves in the labor market if the disclosure of the investigation reflects negatively on their own supervision. This may lead them to be more likely to terminate the CEO, either due to public pressure from the disclosure, or as a way of blaming the CEO to resolve cognitive dissonance about their own role in the potential fraud (Chang, Solomon, and Westerfield 2016).[12]

To test this, we examine how investigations, disclosures of investigations, and enforcement actions affect the likelihood of CEO turnover. We consider a panel of all firms between 1997 and 2010 (five years either side of the main investigation opening period), where CEO data can be matched from either Execucomp or Boardex. Following Core, Guay, and Larcker (2008), we model CEO turnover as a change of CEO in the current year or the subsequent year.[13] We match each annual observation to whether that year featured the opening of an investigation, the disclosure of an

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[12] Garrett, Li, and Rajgopal (2018) show higher levels of CEO turnover when firms themselves (rather than individuals) face criminal prosecution.

[13] The rationale for using any turnover within two years as the dependent variable is that we are primarily interested in the effect on the CEO at the time of the investigation disclosure, but it is unclear whether the effects should operate immediately or with a delay. In addition, turnover is unlikely to be independent year-to-year, especially for investigation disclosures (e.g. if the CEO is terminated in the year of the disclosure, it is unlikely that disclosure will also increase the chance of the new CEO being terminated the following year). In untabulated results, we take as the dependent variable one-year turnover, and the independent variable any disclosure in the current year or previous year. We find similar effects of disclosure (and coefficients that are, if anything, slightly larger), indicating that the disclosure results are not driven by autocorrelation in the dependent variable that clustering has failed to account for.

investigation, or an action (split according to type). Dummy variables for these categories are the main independent variables of interest. We use controls from Core, Guay, and Larcker (2008): log CEO tenure, log market capitalization, log book-to-market, five-year industry-adjusted stock return, return on assets, and sales growth (with firm characteristics being matched to the year prior to the first of the two years over which turnover is considered). Standard errors are clustered by firm and year.

These results are presented in Table 8. In column 1, we examine the effects of an SEC investigation opening in that year, controlling only for firm and CEO characteristics. As in Table 5, SEC investigations are considered bad news, even after controlling for firm performance. If a CEO's firm gets investigated in a given year, the CEO is a statistically significant 11.7 percentage points more likely to be out of the job by the end of the following year (t-statistic of 3.98). In column 2, we add a variable for disclosure and find that firms that disclose an investigation are 13.8 percentage points more likely to experience turnover (with a t-statistic of 4.57) by the end of the following year.

This specification does not control for the eventual outcome, so we add controls for any action (column 3) and the different types of action (column 4), again matched up to the year that these actions occurred. As expected, being subject to an enforcement action is associated with a higher chance of turnover (10.9 percentage points). More importantly, controlling for the outcome of the investigation makes almost no difference to the estimated effect of disclosure, which is 13.6 percentage points in column 3 (t-statistic of 4.32) and 13.7 percentage points in column 4 (t-statistic of 4.17). Similarly, the effect of the investigation opening is also stable across each specification, at 7.6 or 7.7 percentage points in columns 2-4. A considerable part of the estimated effects of being investigated is due to disclosure, but the effects of disclosure are not strongly related to the investigation outcome.

Analogous to the effects on firm returns, disclosure of an investigation is associated with large and significantly worse labor market outcomes for CEOs, even after controlling for the existence of the investigation and the eventual outcome of the investigation. Indeed, a striking comparison from

column 3 is that the point estimate of the effect of disclosing an investigation is actually *larger than the effect of the action itself.* This is difficult to reconcile with disclosure simply being a proxy for the eventual outcome of the investigation. Turnover is more likely for all CEOs whose firms are under investigation, regardless of any other controls. This is consistent with boards reacting negatively to the existence of the investigation when evaluating the CEO, irrespective of how the investigation proceeds, or managers becoming distracted when their firm is under investigation.

Unlike financial markets, where investors will only know of the existence of an investigation if it is publicly disclosed or enforcement actions ensue, boards will be aware of the investigation from its inception. The board's negative reaction to public disclosure is thus not a result of being apprised of the investigation. Rather, it seems more likely due to the adverse publicity surrounding the disclosure of the SEC's involvement. The results from the CEO labor market are consistent with those from the stock market. Disclosing an investigation is associated with a higher probability of a change in CEO. As before, disclosure is not randomly assigned, so it is difficult to rule out the effects of all omitted variables. Nonetheless, the stability of the estimates when controls for outcome are added make it less likely that the results are due only to the severity of the underlying events.

4. Discussion and Policy Implications

The most straightforward interpretation of our results is that disclosing the existence of an SEC investigation leads to a long-lived negative impression of the firm among investors, even for firms that are ultimately exonerated. Neither investigations nor the announcements of investigations result in negative short-term earnings surprises, suggesting that the lower stock returns associated with disclosure are likely coming from market estimates of longer-run costs for the firms involved, not the direct costs of the investigation to the firm.

Throughout our results, there is no evidence that transparency in disclosing fraud investigations is ever rewarded on net, either in the stock market or the CEO labor market. To believe

that the rewards to transparency outweigh the potential stigma, such that disclosure is on net a positive effect for firms, one must believe in some very large counteracting selection effects at either the firm level or the event level. In other words, disclosure would need to be good, but disclosing firms are somehow much worse for other reasons. As we can proxy for the most likely selection effect associated with disclosure – the significance of the potential allegations – by using the ex-post outcome, it is not clear what other effect could drive such a counter explanation.

These results have implications for the policy question of whether firms ought to be required to disclose the existence of investigations. This comprises two parts: whether firms should have discretion over the disclosure question, and if not, whether the mandate ought to be disclosure or non-disclosure. Out of the two, our findings seem to bear more strongly on the first question. At present, the choice is effectively left to individual firms. In our sample period, there was considerable legal uncertainty over whether disclosure was legally required, but even in the present time, case law merely finds that *some* investigations do not constitute necessarily material events. As a result, the decision is still to a significant degree a judgment call by the managers, the board, and legal counsel.

Firms that disclose the investigation are being more open and transparent, in a way that investors and regulators typically claim to want. And yet our results suggest that both the firm and the CEO are being significantly punished for their transparency. The firms that choose to be less transparent by not disclosing seem to end up better off. It is not entirely clear *why* disclosing firms make the choice they do. Individual legal counsel may have different idiosyncratic views, or firms may believe they will be rewarded by regulators for transparency. Whatever rewards they may get do not appear to offset the market's estimate of the negative consequences of the investigation. As a result, the current policy implicitly incentivizes a lack of transparency, such that more forthright firms and managers pay higher costs. This seems undesirable, both as a matter of fairness, and for the aim of generally encouraging firms to disclose more. A clear regulatory or legal ruling one way or the other –

that disclosure is always mandated (either by the firm or by the SEC itself), or that firms will face no legal sanction or liability for failing to disclose the investigation – would seem beneficial.

The second question, namely which way a possible mandate ought to go, is harder to answer. Future shareholders would clearly want to be informed of possible regulatory action against the firm, and may feel aggrieved that managers know about the possibility but are not forced to disclose it. However, existing shareholders and managers are likely to prefer non-disclosure – not just because disclosure reveals inevitable bad news, but because our results suggest the existence of a long-lived stigma, even for firms that are ultimately cleared. Indeed, whether or not the benefits of disclosure outweigh the costs, our paper identifies the existence of a significant cost that may not have been given enough regulatory weight. Attaching a stigma to firms that ultimately are not sanctioned seems to be an undesirable outcome of current arrangements. The main benefit is if one believes that a significant fraction of firms that the SEC chooses not to sanction have actually committed some wrongdoing regardless, and the disclosure of the investigation is the only way investors have to find this out. This could occur if the number of actions is limited by SEC resource constraints (e.g. a fraud is detected but not sanctioned due to the inability to fully investigate). It is worth noting that the standard here is the civil standard of the balance of probabilities, not the criminal standard of proof beyond reasonable doubt. As a result, a failure to sanction could also be interpreted as the SEC's belief that they would be unable to establish that the wrongdoing was more likely than not to have occurred.

A second cost to mandating disclosure, however, is that being forced to impose a stigma cost on all firms may deter the SEC from beginning investigations in the first place. To the extent that this enables some guilty firms to get away without an investigation, or encourages firms to engage in more fraud due to a lower expectation of enforcement, this is an undesirable outcome.

Instead, it seems quite defensible for regulatory authorities to adopt a policy like most criminal law enforcement procedures – that an investigation is just a fact-finding mission, and does not warrant

any disclosure. It is not an implication of guilt, and not even an implication that any charges will eventually be brought (indeed, only a quarter of investigations lead to formal legal proceedings). Police generally do not announce the names of criminal suspects in ongoing investigations unless they are appealing to the public to locate a suspect, a consideration that is irrelevant for the SEC. Even a strong investor protection motivation does not immediately suggest mandating disclosure, as investors in firms that are ultimately exonerated appear harmed by disclosing the investigation.

If disclosure were to be mandated, there is another potential policy improvement that would be beneficial, namely, mandating that the SEC makes an equally prominent announcement if an investigation concludes *without* any penalties being sought. At the moment, the opening of the investigation is accompanied by considerable attention, whereas the conclusion often involves an internal winding down of the investigation without any declaration to this effect. Indeed, internal SEC "close dates" listed for investigations in our data are often years after investigative efforts have ceased. If disclosure is deemed sufficiently important that possible sanctions must be immediately communicated to investors, it is hard to see why the *lack* of such sanctions ought not be considered an equally important event worthy of clear disclosure and publicity.

5. Conclusion

The criminal justice system in most Western countries has a number of curiously anti-Bayesian aspects. Various factors which a Bayesian decision-maker would consider relevant are excluded at trial, such as a defendant's past criminal convictions. At the end of the trial, the system comes to a binary decision, not a posterior distribution – the defendant is found guilty or not guilty. However, there is no assurance that the public, who very likely *are* interested in gradations and probabilities of guilt and innocence, will react in the same way. As a result, it is possible that steps taken by the legal system towards a binary goal of guilt or innocence, such as opening or disclosing an investigation, will impose costs those being investigated and charged, regardless of the outcome of the trial.

Our results are consistent with disclosure of an SEC investigation creating a stigma even when no action is ultimately brought against a firm. Firms are punished with lower returns around disclosure, and CEOs are punished with a higher chance of being terminated. These effects hold even when comparing firms where the investigation had the same ultimate outcome, suggesting that disclosure is unlikely to simply proxy for the severity of the underlying allegations. Disclosure does not impact short-term earnings surprises, suggesting that the costs are not direct results of the investigation affecting current earnings, but instead are linked to long-term reputational harm.

Our analysis suggests that there is limited upside for firms in disclosing SEC fraud investigations, and even less to disclosing it prominently. For investors, such a conclusion is unlikely to foster the type of transparency desired when investing in a firm. If regulators sought to fix this situation, a better solution would be to either mandate disclosure for all firms, or set clear rulings that no legal liability or sanction will follow from non-disclosure. At the same time, we find that three-quarters of investigations for financial fraud commenced by the SEC do not result in an enforcement action, meaning that mandating such disclosure would likely alter regulators' incentives about which firms to investigate. Currently, by providing firms the discretion to disclose, those that choose the path of transparency appear to be punished with lower stock prices and lower job security for their most senior leaders. Remedying this unhappy state of affairs is a policy goal worth pursuing.

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Table 1: Sample Composition and Investigation Statistics

This table describes the sample of investigations conducted by the SEC of companies for financial fraud, initiated between 2002 and 2005. Panel A describes the various screens that occur between the initial large sample of investigations for potential securities violations, and the final sample of closed investigations into publicly traded companies for financial fraud specifically. In Panel B, we split the sample according to investigations that resulted in subsequent enforcement action and those that did not. "Administrative Proceedings" refer to actions brought within SEC administrative tribunals, and "Civil Actions" refers to actions brought in the civil court system. "Individual Only" refers to both civil and administrative actions where only individuals within the firm were targeted, but not the firm itself. "Disclosure" refers to the first time in any public disclosure that the SEC was involved in the matter. "Voluntary" disclosures are deemed to be those that occurred where there was no subsequent enforcement action, as well as those where there was an action but the firm disclosed more than one week before the date of the action itself.

Panel A - Sample Composition and Sources		
	N	Source
Number of SEC Investigations of Possible Securities Violations between 2002-2005	3,309	Public SEC Report
Unclassifed Investigations	50	FOIA
Total Classifed Investigation Opened	3,259	
Non-financial fraud investigations	2,288	
Number finanical fraud investigations	971	FOIA
Ongoing fraud investigations	16	FOIA
Total Completed Financial Fraud Investigations	955	
Remove individuals and inquiry "areas"	47	
Remove firms not traded (on CRSP) as of open date	290	
# Publicly Traded Financial Fraud Investigations	618	

Panel B - Investigation Outcomes and Disclosures			
	All	Action	No-Action
Number of Fraud Investigations	618	156	462
Mean Duration of Investigation Until Close (yrs)	3.83	7.68	2.52
Mean Duration of Investigation Until First Action (yrs)	-	2.52	-
Number Unique Firms Under Investigation	587	155	445
Number of Investigations with Enforcement Actions		156	
Number of Investigations with Civil Actions		62	
Number of Investigations with Administrative Proceedings		74	
Number of Investigations with Individual Only Enforcement		32	
Total Number of Enforcement Actions		202	
Total Number of Civil Actions		63	
Total Number of Administrative Proceedings		75	
Total Number of Individual Only Enforcement Actions		64	

	All	Action	No-Action
Any Disclosure (1/0)	0.544	0.955	0.405
Voluntary Disclosure (1/0)	0.513	0.833	0.405
Mean Time from Investigation Open to Any Disclosure (days)	165	224	92
Median Time from Investigation Open to Any Disclosure (days)	64.5	118	39

How disclosed?	
Press Release	0.511
8-K	0.250
10-Q	0.164
10-K	0.158
Conference Calls	0.021
Leaks	0.024
Other	0.006

Table 2: Summary Statistics

This table describes the characteristics of sample firms facing SEC securities fraud investigations between 2002 and 2005. Panel A presents characteristics for all firms under investigation. Market Capitalization is calculated one day before the opening of the investigation. "1 Yr Char-Adj Return Prior to Open Date" is the stock return from 252 days before opening to one day before, minus the returns of a portfolio of firms in the same quintile of market capitalization, book-to-market ratio, and momentum, as in Daniel, Grinblatt, Titman and Wermers (1997). "Book-to-Market" is the book value of equity, divided by market capitalization in the December of the year of the accounting information. "Return on Assets" is Net Income divided by total assets. "CEO Tenure Before Open Date" is the number of years the CEO has been in the job, for whoever is the CEO in the year the investigation opens. Panel B compares the difference in traits between firms which subsequently have enforcement actions, versus those who do not. Standard errors for *t*-statistics in Panel B are clustered by firm and date. All variables are winsorized at the 2% level in each tail. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

Panel A - Firm Characteristics, All Investigations								
	N	Mean	Std Dev	P10	P25	P50	P75	P90
Market Capitalization ($m)	618	5,651	13,692	37	131	642	3,225	13,944
1 Yr Char-Adj Return Prior to Open Date	566	-16.27	46.12	-68.54	-45.49	-17.17	4.60	36.67
Book-to-Market	583	0.90	1.78	0.16	0.26	0.49	0.81	1.31
Return on Assets	578	-3.43	19.15	-23.19	-4.39	1.57	6.04	11.00
CEO Tenure Before Open Date	612	5.64	6.45	0.36	1.26	3.62	7.45	14.09

Panel B - Firm Characteristics, Action vs No Action							
	Action			No Action			Diff
	N	Mean	Std Dev	N	Mean	Std Dev	t-stat
Market Capitalization ($m)	156	5,303	13,020	462	5,769	13,923	-0.37
1 Yr Char-Adj Return Prior to Open Date	132	-28.80	46.11	434	-12.46	45.50	-3.59***
Book-to-Market	148	0.93	1.78	435	0.89	1.78	0.22
Return on Assets	143	-2.33	18.04	435	-3.79	19.50	0.79
CEO Tenure Before Open Date	156	5.66	7.06	456	5.63	6.24	0.04

Table 3: Determinants of Fraud Investigation Disclosure

This table examines the determinants of whether firms under investigation by the SEC voluntarily disclose to the public the existence of the investigation. Voluntary disclosures are deemed to be those disclosures where the firm disclosed and there was no subsequent enforcement action, as well as those where there was an action and the firm disclosed more than one week before the date of the action itself. OLS regressions are shown for a dummy variable for disclosure on various firm characteristics. "'Accruals'' is calculated as in Sloan (1996). "Governance G Score" is taken from Gompers, Ishii, and Metrick (2003). "IR Firm" is a dummy variable for whether the company used an external Investor Relations firm, from Solomon (2012). "CEO Above 65 Years Old" and "Log CEO Tenure" are calculated as of the investigation open date. All other variables are defined in Table 2. Panel B includes dummy variables for whether there was a civil action against the firm, an administrative action against the firm, or actions against individuals at the firm. The top number in each row is the coefficient, the bottom number in parentheses is the t-statistic, with standard errors clustered by firm and date. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

				Panel A - All Investigations, Regardless of Outcome							
Log Market Cap	0.021**										0.034
	(2.20)										(1.21)
Adjusted Return, t-252 : t-1		-0.108**									-0.037
		(-2.43)									(-0.34)
Accruals			0.377								0.102
			(1.42)								(0.15)
Log Book-to-Market				0.003							0.138***
				(0.16)							(3.03)
Return on Assets					0.074						-0.322
					(0.67)						(-1.03)
Governance 'G' Score						0.004					0.000
						(0.36)					(0.04)
IR Firm							0.134***				0.015
							(2.94)				(0.16)
Log CEO Tenure								-0.014			-0.075*
								(-0.98)			(-1.96)
CEO present 2 yrs before open									0.032		0.203
									(0.73)		(1.56)
CEO Above 65 Years Old										-0.064	-0.144
										(-0.89)	(-1.36)
Observations	618	566	475	583	578	314	605	610	612	469	199
R-squared	0.009	0.010	0.004	0.000	0.001	0.000	0.014	0.002	0.001	0.002	0.090

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel B - All Investigations, Controlling for Subsequent Actions											
Action (Civil)	0.404***	0.418***	0.408***	0.419***	0.416***	0.377***	0.399***	0.418***	0.416***	0.398***	0.289***
	(8.35)	(8.01)	(7.37)	(8.64)	(8.15)	(6.06)	(8.07)	(8.70)	(8.65)	(6.26)	(2.68)
Action (Administrative)	0.350***	0.342***	0.403***	0.352***	0.360***	0.257***	0.328***	0.344***	0.347***	0.358***	0.292***
	(6.79)	(6.37)	(7.27)	(6.49)	(6.65)	(3.37)	(6.02)	(6.52)	(6.73)	(6.27)	(2.88)
Action (Individual Only)	0.374***	0.373***	0.362***	0.382***	0.360***	0.159	0.325***	0.344***	0.345***	0.352***	0.197
	(4.49)	(4.32)	(3.71)	(4.81)	(4.01)	(0.90)	(3.73)	(4.23)	(4.20)	(3.12)	(0.93)
Log Market Cap	0.022**										0.021
	(2.43)										(0.73)
Adjusted Return, t-252 : t-1		-0.054									0.001
		(-1.36)									(0.01)
Accruals			0.175								-0.200
			(0.79)								(-0.31)
Log Book-to-Market				0.007							0.119**
				(0.37)							(2.57)
Return on Assets					0.035						-0.286
					(0.33)						(-1.00)
Governance 'G' Score						0.001					-0.003
						(0.05)					(-0.21)
IR Firm							0.106**				0.025
							(2.34)				(0.27)
Log CEO Tenure								-0.006			-0.069*
								(-0.46)			(-1.83)
CEO present 2 yrs before open									0.052		0.199
									(1.30)		(1.56)
CEO Above 65 Years Old										-0.061	-0.120
										(-0.92)	(-1.21)
Observations	618	566	475	583	578	314	605	610	612	469	199
R-squared	0.143	0.135	0.154	0.143	0.138	0.089	0.133	0.133	0.136	0.125	0.150

Table 4: Disclosure Returns and Subsequent Actions

This table examines the returns of firms around voluntary disclosure of SEC fraud investigations, and whether markets show an ability to discern which investigations will result in subsequent enforcement actions. Panel A includes all disclosures of investigations. Panel B includes only investigations that were associated with an earnings restatement around the time of the investigation opening. Panel C includes only investigations that lack a surrounding earnings restatement. Voluntary disclosures are deemed to be those disclosures that occurred where there was no subsequent enforcement action, as well as those where there was an action but the firm disclosed more than one week before the date of the action itself. The dependent variable is the 3-day stock returns surrounding the disclosure day, minus the return on a portfolio of stocks matched on quintiles of market capitalization, book-to-market ratio, and return from 2-12 months ago (momentum). These returns are regressed on firm characteristics and investigation outcomes. "Action (Any)" is a dummy variable equal to one if any enforcement action resulted. a civil action against the firm, an administrative action against the firm, or actions against individuals at the firm. This is broken down into subcategories of whether there was a civil action against the firm ("Action (Civil)"), an administrative action against the firm ("Action (Admin)"), or actions against individuals at the firm ("Action (Individual Only)"). Other controls are defined in Tables 1 and 2. In Panel B, additional controls are included about the earnings restatement, taken from Files (2012) based on data from the General Accounting Office. These include a dummy variable for whether there was future shareholder litigation, the number of accounting issues raised, the size of the provable loss, and the magnitude of the earnings restatement divided by firm assets. The top number in each row is the coefficient, the bottom number in parentheses is the *t*-statistic with standard errors clustered by firm and date, and *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Panel A - All Voluntary Disclosures			
	Dep. Var. is 3-day Adjusted Return around Disclosure			
Action (Any)	-3.05**		-2.63*	
	(-2.33)		(-1.86)	
Action (Civil)		-2.48		-3.69*
		(-1.33)		(-1.78)
Action (Admin)		-3.59**		-1.70
		(-2.09)		(-0.89)
Action (Individual Only)		-0.96		1.33
		(-0.38)		(0.51)
Log Market Cap			0.76**	0.97**
			(1.97)	(2.26)
Accruals			-3.44	-2.07
			(-0.41)	(-0.24)
Log Book-to-Market			0.86	1.03
			(1.27)	(1.49)
Return on Assets			4.82	3.80
			(1.07)	(0.83)
Constant	-2.90***	-2.92***	-12.80**	-15.71***
	(-4.89)	(-4.87)	(-2.38)	(-2.63)
Observations	299	299	217	217
R-squared	0.022	0.028	0.062	0.073

Panel B - Earnings Restatements Only				
Action (Any)	-5.41**		-3.64	
	(-2.58)		(-1.53)	
Action (Civil)		-6.73**		-6.77*
		(-2.16)		(-1.68)
Action (Admin)		-4.87*		-2.07
		(-1.69)		(-0.65)
Action (Individual Only)		-2.09		4.41
		(-0.49)		(1.23)
Future Litigation	-0.03	-0.73	1.22	0.56
	(-0.01)	(-0.33)	(0.50)	(0.23)
Number of Issues	1.27	0.94	0.15	-0.15
	(0.80)	(0.60)	(0.08)	(-0.08)
Provable Loss	0.00	0.00	0.00	0.00
	(1.03)	(1.15)	(1.05)	(1.12)
Restatement Magnitude	1.55***	1.50***	1.18**	0.96*
	(3.49)	(3.13)	(2.30)	(1.82)
Log Market Cap			-0.16	0.56
			(-0.22)	(0.73)
Accruals			-9.00	-4.35
			(-0.66)	(-0.32)
Log Book-to-Market			3.60	4.46*
			(1.33)	(1.85)
Return on Assets			3.78	2.01
			(0.44)	(0.21)
Constant	-1.55	-0.81	2.55	-6.19
	(-0.64)	(-0.34)	(0.23)	(-0.53)
Observations	103	103	78	78
R-squared	0.143	0.174	0.157	0.214

Panel C - Disclsoures Other Than Earnings Restatements				
Action (Any)	-1.67		-2.13	
	(-1.06)		(-1.23)	
Action (Civil)		0.16		-2.06
		(0.07)		(-0.80)
Action (Admin)		-2.93		-0.90
		(-1.50)		(-0.40)
Action (Individual Only)		-0.75		-2.33
		(-0.29)		(-0.80)
Log Market Cap			1.09**	1.14**
			(2.30)	(2.16)
Accruals			7.98	7.94
			(0.81)	(0.75)
Log Book-to-Market			0.39	0.43
			(0.56)	(0.60)
Return on Assets			3.44	3.24
			(0.65)	(0.59)
Constant	-3.69***	-3.79***	-18.32***	-19.03***
	(-5.13)	(-5.31)	(-2.74)	(-2.62)
Observations	196	196	139	139
R-squared	0.007	0.013	0.093	0.091

Table 5: Returns around Fraud Investigation and Disclosure

This table examines the returns of firms around the opening of SEC fraud investigations, according to whether or not the firm disclosed the existence of the investigation. The sample is of firms who either voluntarily disclosed the investigation between the day of opening (date t) and 504 days after, or those that never disclosed the investigation. The main independent variable, "Disclose," takes a value of one for the former category, and zero for the latter category. The dependent variable varies by column, and is the characteristic-adjusted return from one day before the investigation opening until, respectively, 20 days after (column 1), 60 days after (column 2), 120 days after (column 3), 252 days after (column 4) and 504 days after (column 5). Stock returns for each period are adjusted by subtracting the return on a portfolio of stocks matched on quintiles of market capitalization, book-to-market ratio, and return from 2-12 months ago (momentum) over the same period. Panel A includes all investigations, both with and without enforcement, but does not control for enforcement. Panel B includes only those investigations that resulted in no ultimate enforcement action. Panel C includes all investigations, but controls for the existence and type of enforcement, either civil, administrative, or individual. Panel D includes all investigations, and controls for both enforcement and firm characteristics, with variables defined in Tables 1 and 2. The top number in each row is the coefficient, the bottom number in parentheses is the t-statistic with standard errors clustered by firm and date, and *, **, and *** denote significance at the 10%, 5%, and 1% level respectively.

	Panel A - All Disclosures, No Controls for Outcome				
	(t-1,t+20)	(t-1,t+60)	(t-1,t+120)	(t-1,t+252)	(t-1,t+504)
Disclose	-3.56***	-7.82***	-8.70***	-11.50**	-12.54
	(-2.85)	(-4.05)	(-3.53)	(-2.43)	(-1.53)
Constant	0.20	-0.88	-1.87	0.02	3.91
	(0.30)	(-0.75)	(-1.24)	(0.01)	(0.76)
Observations	602	581	562	533	481
R-squared	0.015	0.028	0.020	0.012	0.006

	Panel B - Only Investigations with No Ultimate Action				
	(t-1,t+20)	(t-1,t+60)	(t-1,t+120)	(t-1,t+252)	(t-1,t+504)
Disclose	-4.60***	-6.74***	-7.78***	-12.67**	-9.94
	(-3.34)	(-3.04)	(-2.80)	(-2.41)	(-1.00)
Constant	0.86	0.44	-1.11	1.73	5.63
	(1.26)	(0.37)	(-0.71)	(0.55)	(1.04)
Observations	452	443	434	411	373
R-squared	0.025	0.020	0.015	0.013	0.003

	Panel C - All Disclosures, Controls for Investigation Outcome				
	(t-1,t+20)	(t-1,t+60)	(t-1,t+120)	(t-1,t+252)	(t-1,t+504)
Disclose	-2.81**	-5.44***	-6.86***	-8.43*	-6.86
	(-2.21)	(-2.60)	(-2.71)	(-1.79)	(-0.80)
Action (Civil)	0.48	-3.67	-4.42	-8.04	-10.39
	(0.21)	(-0.97)	(-0.98)	(-1.06)	(-0.82)
Action (Admin)	-3.28	-10.64***	-7.05*	-9.11	-25.50**
	(-1.51)	(-3.16)	(-1.82)	(-1.49)	(-2.47)
Action (Individual Only)	-4.42	-2.98	-1.59	-4.10	21.19
	(-1.16)	(-0.55)	(-0.19)	(-0.25)	(0.69)
Constant	0.47	-0.04	-1.28	0.89	5.40
	(0.68)	(-0.04)	(-0.83)	(0.29)	(1.04)
Observations	602	581	562	533	481
R-squared	0.023	0.050	0.027	0.017	0.019

	Panel D - All Disclosures, Full Controls				
	(t-1,t+20)	(t-1,t+60)	(t-1,t+120)	(t-1,t+252)	(t-1,t+504)
Disclose	-3.86**	-7.55***	-11.16***	-13.50**	-19.48**
	(-2.54)	(-3.37)	(-3.75)	(-2.43)	(-2.09)
Action (Civil)	-1.18	-4.24	-5.87	-9.72	-7.87
	(-0.45)	(-1.04)	(-1.13)	(-1.22)	(-0.68)
Action (Admin)	0.51	-5.14	-2.60	-2.97	-11.96
	(0.21)	(-1.53)	(-0.60)	(-0.42)	(-1.09)
Action (Individual Only)	1.33	5.03	1.69	4.26	14.28
	(0.28)	(0.83)	(0.18)	(0.21)	(0.56)
Log Market Cap	0.00	-0.07	-0.34	-1.27	-2.10
	(0.01)	(-0.12)	(-0.44)	(-0.84)	(-0.78)
Accruals	3.73	-2.12	3.29	-45.41	-92.70
	(0.42)	(-0.14)	(0.17)	(-0.93)	(-1.37)
Log Book-to-Market	-0.33	-1.30	-1.98	1.25	11.43**
	(-0.41)	(-1.14)	(-1.30)	(0.40)	(2.36)
Return on Assets	-3.84	-0.60	5.99	31.37	51.23
	(-0.71)	(-0.07)	(0.57)	(1.56)	(1.64)
Adj Return (t-252,t-2)	6.33***	17.43***	19.61***	25.57***	36.00***
	(3.57)	(6.74)	(5.10)	(3.44)	(2.98)
Log CEO Tenure	0.31	-0.84	-2.22**	-2.39	-1.97
	(0.68)	(-1.06)	(-2.26)	(-1.35)	(-0.60)
Observations	443	427	415	396	365
R-squared	0.027	0.072	0.066	0.041	0.061

Table 6: Analyst Forecast Errors and Disclosure

This table examines analysts' forecast errors after the opening of SEC fraud investigations, according to whether or not the firm disclosed the existence of the investigation. The main independent variable, "Disclose," takes a value of one if the firm voluntarily disclosed the investigation, and zero otherwise. The dependent variable uses analysts' forecasts for quarterly earnings announcements, for the four announcements after the opening of an SEC investigation into the firm, taken from the IBES database. This is calculated over the most recent forecast made by each analyst, between 90 days before and 3 days before the announcement, and computes the median. The forecast error is actual earnings per share minus the median forecast, divided by the price 3 days before the opening of the investigation, with this variable winsorized at the 2% level in each tail. The top number in each row is the coefficient, the bottom number in parentheses is the t-statistic with standard errors clustered by firm and date, and *, **, and *** denote significance at the 10%, 5%, and 1% level respectively.

	1st Ann.	2nd Ann.	3rd Ann.	4th Ann.
Disclose	-0.173	-0.208	0.037	0.131
	(-0.94)	(-1.31)	(0.24)	(0.79)
Constant	-0.151	0.057	-0.004	-0.011
	(-1.22)	(0.67)	(-0.04)	(-0.09)
Observations	395	364	337	292
R-squared	0.002	0.005	0.000	0.002

Table 7: Fraud Disclosure Returns and Obfuscation

This table examines the returns of firms around voluntary disclosure of SEC fraud investigations, according to whether or not the firm obfuscated aspects of the disclosure. The main variable is the adjusted returns from one day before disclosure (date t) to various horizons afterwards: 1 day (column 1), 20 days (column 2) 60 days (column 3), 120 days (column 4) and 252 days (column 50. "Less Prominent Medium" is a dummy variable equal to one if the disclosure occurred in a form likely to attract less attention, namely, a filing with the SEC of an 8-K form (voluntary disclosure), 10-Q (quarterly earnings report), 10-K (annual report), or other SEC filing. The omitted category of "prominent disclosures" covers press releases, conference calls, and leaks. "Not Called an Investigation" is a dummy variable equal to one if the firm describes the investigation as something other than an investigation (such as euphemisms like "inquiry" or "informal inquiry"). The top number in each row is the coefficient, the bottom number in parentheses is the t-statistic with standard errors clustered by firms and date, and *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

	(t-1,t+1)	(t-1,t+20)	(t-1,t+60)	(t-1,t+120)	(t-1,t+252)
Less prominent medium	3.06***	5.03***	7.13**	7.20*	13.98**
	(2.70)	(2.82)	(2.57)	(1.88)	(2.25)
Not Called an investigation	2.09	-0.16	1.60	0.70	-3.20
	(1.54)	(-0.08)	(0.50)	(0.17)	(-0.49)
Action (Civil)	-2.52	-1.71	-2.47	-5.43	-8.88
	(-1.42)	(-0.63)	(-0.62)	(-1.16)	(-1.14)
Action (Admin)	-3.87**	-2.97	-10.51***	-10.65**	-12.85*
	(-2.30)	(-1.19)	(-2.77)	(-2.33)	(-1.74)
Action (Individual Only)	-1.87	8.59*	5.53	6.65	3.90
	(-0.66)	(1.89)	(0.82)	(0.67)	(0.22)
Constant	-4.88***	-4.80***	-6.62***	-6.73**	-5.87
	(-5.71)	(-3.30)	(-2.90)	(-2.19)	(-1.35)
Observations	299	294	285	275	253
R-squared	0.075	0.061	0.066	0.042	0.046

Table 8: CEO Turnover and Fraud Investigations

This table examines the effects of SEC investigations, disclosure of investigations, and enforcement actions on CEO turnover. Annual observations are taken for all publicly traded firms with CEO information on either Execucomp or Boardex. The main dependent variable is a dummy variable equal to one if there is any change in the CEO in either the current year or the subsequent year. Investigation is a dummy variable equal to one in the year that an investigation opens. "Disclose" is a variable equal to one if the firm voluntarily discloses the existence of an investigation in that year. "Action" variables ("Any," "Civil," "Admin," "Individual Only") are dummy variables for enforcement actions in the year in question. Other controls are matched from the year before the turnover variable. "Log CEO Tenure" is the log of the number of years since the last CEO turnover event. "5 Year Stock Return (Ind-Adj)" is the 5-year return on the stock minus the return on the matched industry portfolio, using industry definitions from Fama and French (1998). "Sales Growth" is the percentage growth in sales over the prior year. Fixed effects are included for industry-by-year. All other variables are defined in Tables 1 and 2. Standard errors are clustered by firm and year. The top number in each row is the coefficient, the bottom number in parentheses is the t-statistic with standard errors clustered by firm and date, and *, **, and *** denote significance at the 10%, 5%, and 1% level respectively.

	Dependent Variable is any turnover in year t or t+1			
Investigation (t)	0.117***	0.077***	0.076***	0.076***
	(3.98)	(3.91)	(4.10)	(3.79)
Disclose (t)		0.138***	0.136***	0.137***
		(4.47)	(4.32)	(4.17)
Action (Any, t)			0.109**	
			(2.30)	
Action (Civil, t)				0.126**
				(2.30)
Action (Admin, t)				0.061
				(0.95)
Action (Individual Only, t)				0.284*
				(2.11)
Log CEO Tenure (t-1)	-0.047***	-0.047***	-0.047***	-0.047***
	(-12.47)	(-11.01)	(-11.03)	(-12.12)
Log Market Cap (t-1)	0.024***	0.024***	0.024***	0.024***
	(6.89)	(6.83)	(6.81)	(6.80)
Log Book-to-Market (t-1)	0.002	0.002	0.002	0.002
	(0.44)	(0.42)	(0.42)	(0.40)
5 Yr Stock Return (Ind-Adj, t-1)	-0.005*	-0.005*	-0.005*	-0.005*
	(-1.94)	(-1.84)	(-1.81)	(-1.86)
Return on Assets (t-1)	-0.189***	-0.189***	-0.189***	-0.189***
	(-6.98)	(-6.97)	(-6.98)	(-6.98)
Sales Growth (t-1)	-0.004	-0.004	-0.003	-0.004
	(-0.51)	(-0.49)	(-0.47)	(-0.49)
Constant	0.084	0.086	0.086*	0.086*
	(1.76)	(1.79)	(1.80)	(1.80)
Industry * Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	37,234	37,234	37,234	37,234
R-squared	0.045	0.045	0.045	0.045