When Employees Speak Up: The Role of Confidential Witnesses in Shareholder Litigation of Financial Disclosure Fraud[1]

Szu-fan Chen
National Taiwan University
sfanchen@ntu.edu.tw

Shiheng Wang
The Hong Kong University of Science and Technology
acwang@ust.hk

Yue Zheng
The Hong Kong University of Science and Technology
aczheng@ust.hk

[1] We thank Xia Chen (discussant), Andrew Snyder (discussant), Tomoaki Yamashita (discussant), participants at 2024 EAA annual congress, the 2023 AAA annual conference, 2023 AFAANZ annual conference, the Deakin University, the Kyoto University, the National Central University, and the National Chengchi University for valuable comments and suggestions. Szu-fan Chen gratefully acknowledges research support from the National Science and Technology Council (111-2634-F-002-018, 112-2410-H-002-188-MY2).

When Employees Speak Up: The Role of Confidential Witnesses in Shareholder Litigation of Financial Disclosure Fraud

Abstract

For shareholders seeking to hold managers liable for fraudulent financial disclosures in securities lawsuits, a major hurdle is establishing managers' intent to defraud and providing particulars of misstatements. A common practice to overcome this hurdle is to encourage employees to provide misstatement-related information. We study the determinants and consequences of involving employee confidential witnesses (ECWs) in securities lawsuits. We find that shareholders are more likely to engage ECWs when there is limited public information about misstatements, when significant negative market events hint at potential fraud, when misstating firms have higher labor intensity and employee growth rates, or when employees are less satisfied with their firms. Additional analysis reveals that ECWs from specific job functions are more knowledgeable about misstatements related to their functions. The presence of ECWs increases both the likelihood of settlement and lawsuit duration, especially when ECWs provide more specific information about misstatements. Our study sheds new light on the role of rank-and-file employees in disciplining corporate financial disclosure fraud.

Keywords: financial disclosure fraud; misstatement, employee confidential witnesses; securities litigation; scienter information; particularity information; corporate governance

1. Introduction

Private securities litigation plays an important role in keeping fraudulent financial disclosures at bay (Schantl and Wagenhofer [2020]). The Private Securities Litigation Reform Act (PSLRA) of 1995 requires shareholders to provide specific evidence indicating that defendants acted with intent to defraud. However, this requirement has unintentionally raised hurdles for meritorious lawsuits (Choi [2007]). An increasingly common practice to overcome these pleading hurdles is to recruit former or current employees as confidential witnesses (ECWs) who provide insider information against the firm and its management.[2]

Plaintiffs use information from ECWs to demonstrate the culpability of the management or to support allegations of falsity. This information is provided anonymously, as the ECWs are not named in the pleadings. Courts remain divided on the credibility of ECWs (Kaufman and Wunderlich [2010], Mark [2011], Rakoff [2014]). While employees may have unique access to information about financial misstatements through their daily operations and interactions with management (Dyck et al. [2010], Call et al. [2016], Call et al. [2018], Gao and Jia [2021], Berger and Lee [2022]), most of rank-and-file employees do not possess direct insider information about misstatements.[3] Instead, they typically learn about their employers' financial status through public disclosures (deHaan et al. [2023], Hilary et al. [2025]). Additionally, employees' statements may be biased and fear of retaliation along with loyalty obligations often deter employees from serving as ECWs, making them a costly and less credible information source.

[2] Confidential witnesses in securities class actions are predominantly former or current employees. In some rarer cases, they may include customers or suppliers of the defendant company.
[3] We use "misstatements" to refer to fraudulent financial disclosures that allegedly violate Section 10 of the Securities Exchange Act.

Despite these controversies, ECWs are widely used in shareholder litigation (Kaufman and Wunderlich [2010]). However, extant studies lack large-sample evidence on the information role of ECWs in the litigation process, and researchers have yet to understand whether ECWs enhance the efficacy of private enforcement actions just as whistleblowers do for public counterparts (Call et al. [2018]). Our study fills this void by examining the determinants and consequences of shareholders' use of ECWs in securities lawsuits alleging financial disclosure fraud.

We expect shareholders' use of ECWs to be determined by the relative costs and benefits of available information sources that meet PSLRA's pleading requirements (Kaufman and Wunderlich [2010]). When other sources provide compelling evidence of management's intent to deceive and misstatement details ("hard evidence"[4]), shareholders are less likely to rely on employee information. Conversely, when plaintiffs have only indirect signals of misstatements ("soft evidence"), such as negative actions by short-sellers, analysts, or credit rating agencies (Desai et al. [2006], Miller [2006], Karpoff and Lou [2010], Chen [2016], Huang et al. [2023]), employee information becomes pivotal to support fraud allegations.

We also predict that the use of ECWs increases with labor intensity and employee growth, as more employees increase the likelihood of finding individuals with misstatement-related information. Additionally, we examine how the presence of whistleblowers affects ECW usage. While whistleblowers and ECWs both play important roles in disciplining financial disclosures, they serve distinct functions: whistleblowers

[4] We follow Choi [2007] by using "hard" to refer to publicly available information, such as financial restatements, that contains the specifics of misstatement and that helps support the allegations about management's intent.

typically trigger investigations by reporting suspected misstatements, whereas ECWs provide evidence about management involvement after fraud has been discovered. The relationship between whistleblowers and ECW usage is an empirical question. Credible whistleblower testimony could potentially reduce the need for ECWs if it provides sufficient evidence of fraud. However, given that many whistleblower claims have been found to be baseless (Fan et al. [2025]), their presence may actually increase the demand for ECWs to provide additional corroborating evidence.

Using 1,447 securities class action (SCA) lawsuits filed between 2002 and 2022 and obtained from the Stanford Securities Class Action Clearinghouse (SCAC) database, we find 657 cases involving ECWs. The presence of hard evidence (e.g., accounting restatements, late filings, abnormal insider trades, executive turnovers) reduces both the likelihood and the number of ECWs involved in the lawsuits, while soft evidence (e.g., analyst downgrades, rating downgrades, abnormal short selling) increases ECW involvement. Labor intensity and employee growth also significantly boost ECW involvement, and the presence of whistleblowers marginally increases ECW usage. Additional analysis reveals that ECWs' job positions align with specific allegations (e.g., accountants for GAAP violations, salespeople for fictitious sales allegations), supporting the information role of ECWs.

Concerning the efficacy of ECWs in holding managers liable, we examine the likelihood of settlement and the duration of lawsuits. Since courts are cautious about the credibility of confidential sources, the effect of ECWs depends on how convincing their statements are about defendants' culpability. When courts find ECW statements convincing, they may grant plaintiffs more opportunities to gather additional evidence,

lengthening the litigation process while increasing settlement likelihood. Our empirical results confirm these predictions and contrast sharply with other factors. For example, whistleblowers increase settlement likelihood without extending litigation duration.

We further analyze the impact of information content provided by ECWs, including scienter information (testimonies revealing managers' intention to deceive) and particularity information (details about misstatements). We find that ECWs presenting either type of information increase the likelihood of settlement and prolong the duration of litigation compared to cases without such information. However, presenting both types simultaneously does not significantly strengthen the case beyond presenting just one type, suggesting that ECW testimonies serve to complement other sources of information rather than acting as a one-stop information source on their own.

We conclude by examining the effect of employee satisfaction on ECW involvement, based on anonymous employee ratings from Glassdoor.com. We use ratings preceding the misstatement period as a proxy for employees' satisfaction with their firms and find that ECW involvement is negatively associated with employee ratings. Moreover, lower satisfaction ratings are associated with a greater willingness from ECWs to share more specific details about misstatements. These findings suggest that employees' negative perception of their firms influence their motivation to support shareholder litigation.

This paper contributes to prior literature in two important ways. First, it adds to the literature that examines the role of rank-and-file employees in disciplining financial disclosure fraud. Extant studies focus on whistleblowers and show that employees have information about fraud (Campbell and Shang [2022]) and that whistleblower protections deter fraud (Dyck et al. [2010], Stubben and Welch [2020], Berger and Lee [2022]).

However, we find that there is a limited presence of whistleblowers in private enforcement actions, which are the main enforcement mechanism of securities regulations. ECWs appear to fill this gap in private lawsuits. Moreover, whistleblowers and ECWs play distinct roles in disciplining fraudulent financial disclosure behavior; the former expose fraud while the latter provide information about management's culpability. Thus, our paper extends prior studies by examining the corporate governance role of employees who serve as ECWs in securities class actions.

Second, this study enhances our understanding of mechanisms to improve the effectiveness of private enforcement actions. Prior studies furnish various evidence for significant impacts of private enforcement on the cost of debt (e.g., Deng et al. [2014], Chen et al. [2020]), corporate access to external financing (Autore et al. [2014]), corporate disclosures (Hopkins [2018], Houston et al. [2019]), corporate governance (e.g., Brochet and Srinivasan [2014], Yang et al. [2021]), etc. However, mechanisms that enhance the effectiveness of private enforcement actions are less explored. The few studies in this area mainly focus on institutional investors (Cheng et al. [2010]). By showing that rank-and-file employees facilitate the prosecution of financial misstatements when public information of fraud is lacking, this paper extends our understanding of the role of employees as a useful source to strengthen the private enforcement of securities regulations.

2. Institutional Background and Hypotheses Development

2.1.Institutional Background

Private securities litigation serves as a crucial tool for shareholders to deter and punish financial disclosure fraud. However, to minimize meritless lawsuits, the PSLRA

imposes several challenging pleading standards, with scienter and particularity being the most demanding requirements. The scienter standard requires shareholders to provide evidence that strongly suggests defendants' intent to deceive, while the particularity standard mandates that shareholders specify which financial disclosures were misstated and explain why they believe the statements were false or misleading.

Proving management's intent to deceive is inherently difficult without access to insider information. While shareholders can request proprietary documents and records from defendants during the discovery phase to obtain direct evidence of management's involvement in fraud, the PSLRA requires that they first present convincing evidence of management's intent to deceive before proceeding to discovery. This requirement creates a paradoxical situation: shareholders need evidence of management's fraudulent intent so that they can access insider information that would provide such evidence. Employee witness testimony about management fraudulent intent becomes a crucial source of information to overcome evidentiary challenges and resolve the paradox (Mark [2014]).

Similarly, meeting the particularity standard requires shareholders to identify specific information about which statements were misstated, why they were misleading, and when the misstatements occurred. Although financial restatements can potentially provide this information by revealing which accounts were misstated, the reasons for misstatements, and their impact on earnings, they do have limitations. Courts may be skeptical of financial restatements since many restatements do not involve fraud (Pritchard and Sale [2005]). Moreover, anticipating that shareholders will use restatements as evidence of fraud, management has incentives to conceal fraud by avoiding restatements altogether. Consequently, the uncertainty surrounding accounting irregularities and the limited

availability of clear evidence create substantial demand for insider information from employees to satisfy both scienter and particularity requirements.

Although legal studies have long recognized the importance and common use of ECWs in securities litigation, the merit and efficacy of relying on ECWs in securities lawsuits remains debated. This debate centers on two opposing views regarding employees' capabilities and incentives to serve as effective witnesses.

The supporting view of ECWs emphasizes employees' unique access to internal corporate information. Rank-and-file employees are deeply embedded in daily operations and often interact closely with management, giving them an advantageous position to observe information unavailable to external parties. Research on employee insights using Glassdoor ratings supports this premise, demonstrating that employee perspectives reveal incremental information about firm performance and value beyond other information sources. For example, Green et al. [2019] document that firms with improved employee ratings outperform those with declining ratings, while Huang et al. [2020] find that employees' perceptions of their firms' business outlook predict future operating performance and that employees from specific functional areas possess better insights into their function's performance. Similarly, Farhadi and Nanda [2021] show that employee ratings before an IPO can predict post-IPO performance.

Beyond general firm fundamentals, rank-and-file employees may have privileged access to information specifically related to misstatements. Some employees directly observe or are coerced by management to participate in fraudulent disclosure schemes (Dyck et al. [2010]). For example, in the 2021 SEC investigation of Exxon Mobil Corporation, lower-level employees revealed that they were pressured to use unrealistic

drilling assumptions, demonstrating direct employee involvement in financial reporting misconduct (Matthews and Glazer [2021]). Even when employees do not directly observe or participate in misreporting, they may be indirectly affected by managerial pressure or treatment associated with misreporting activities (Call et al. [2016], Caskey and Ozel [2017], Raghunandan [2021], Ji et al. [2022], Ji et al. [2024]). The same forces that drive management to establish overly aggressive profit targets and exert undue pressure on sales personnel to achieve those targets may also motivate fraudulent earnings inflation. Additionally, employees may observe unusual operational activities triggered by fraudulent accounting manipulations (Call et al. [2018]), such as abnormal shipments or sales returns near financial reporting dates—tactics commonly employed to inflate revenues. All these channels may expose rank-and-file employees to information that can satisfy scienter requirements, particularity requirements, or both.

The opposing view of ECWs questions employees' expertise and incentives in detecting and disclosing financial misstatements. First, employees may lack sufficient expertise to distinguish legitimate strategic decisions or complex business transactions from accounting manipulations, potentially leading them to misinterpret rare but legitimate transactions as illicit conduct. For instance, employees might incorrectly view abnormal product returns as evidence of revenue manipulation through channel stuffing when the returns actually result from an unexpected decline in the product's competitive position relative to peer firms.

Second, even when employees possess relevant information about financial misstatements, they may lack sufficient incentives to serve as ECWs. Although courts do not require ECWs to be named, they mandate that plaintiffs describe confidential sources

in sufficient detail to verify that these witnesses possess the alleged information (Lichterman [2010]).[5] This specificity requirement may heighten employees' concerns about potential retaliation from their employers, reducing their willingness to participate as witnesses. The prospect of job loss and declining value of equity compensation and pensions following fraud revelation (Call et al. [2016], Choi and Gipper [2024]) may further discourage employee participation in fraud exposure and litigation. Even former employees may hesitate to serve as witnesses due to concerns about negative repercussions from their previous employers, including potential damage to their professional reputation or future job prospects.

Given the opposite views regarding employees' informational advantages and limitations, the value of ECWs in securities litigation ultimately depends on shareholders' strategic assessment of their costs and benefits relative to alternative information sources. Understanding when shareholders choose to recruit ECWs versus relying on other evidentiary approaches is therefore essential for evaluating the role and effectiveness of employee witnesses in private securities litigation.

2.2.Hypotheses Development for the Determinants of Involving CWs

To understand the value of ECWs in securities litigation, we first examine factors that influence plaintiff shareholders' decisions to recruit ECWs by analyzing the relative costs and benefits of ECWs vis-à-vis other available information sources.

The first factor concerns the sufficiency of publicly available information about the underlying financial misstatements. When public information adequately meets pleading

[5] Appendix A provides examples of how ECWs are described in litigation complaints.

standards, shareholders are less likely to incur additional costs to recruit ECWs. Prior studies demonstrate that PSLRA has increased shareholders' reliance on financial restatements and other public red flags of financial misstatements (Choi [2007]). Accordingly, we predict that shareholders will demand fewer ECWs when public information provides more direct and compelling evidence of financial misstatements.

The second factor involves significant negative market events that suggest potential misstatements. Research indicates that sophisticated market participants, including short-sellers, banks, analysts, and credit rating agencies, often take negative actions against firms during misstatement periods (Joynt [2002], Desai et al. [2006], Karpoff and Lou [2010], Chen [2016], Huang et al. [2023]). These actions may reflect either an unfavorable business outlook, private information about financial misstatements, or both. Although they do not directly speak to management's intent to deceive or the specific nature of misstatements, they can heighten shareholders' suspicions of misstatements, particularly given that poor performance represents a key motive for financial misstatements. This heightened suspicion may motivate shareholders to seek additional information from internal sources, such as employees, to corroborate negative market signals. Therefore, unlike public information about financial misstatements that reduces demand for ECWs, we predict that significant negative market events suggestive of misstatements will increase ECW involvement.

The third factor centers on the presence of whistleblowers. The relationship between whistleblower statements and shareholders' decisions to involve ECWs is theoretically ambiguous. While prior research demonstrates that whistleblowers can effectively enhance corporate governance (Bowen et al. [2010], Wilde [2017]) and tend to target firms with

specific characteristics or cases likely to attract U.S. Department of Justice attention (Bowen et al. [2010], Heese et al. [2021]), many whistleblowers also make unsubstantiated accusations (Fan et al. [2025]). This creates conflicting effects on ECW demand. On one hand, reliable whistleblower information can reduce plaintiffs' evidence-gathering costs, potentially decreasing the need for ECWs. On the other hand, the risk of baseless claims, which could undermine litigation success, may prompt shareholders to seek additional verification through ECW recruitment. Moreover, since whistleblowers' allegations typically focus on exposing misstatements rather than establishing liability for specific executives, shareholders may require ECWs to bridge this gap and strengthen their cases against individual defendants. Therefore, we expect that the presence of whistleblowers increases plaintiff shareholders' demand for ECWs.

The last factor examines the availability of employees possessing misstatement related information. We predict that defendant firms with larger populations of potentially informed employees are more likely to involve ECWs in litigation. Two organizational characteristics potentially influence the availability of informed employees: labor intensity and employee growth. A larger employee base increases the statistical probability that some employees are aware of misstatement activities. Additionally, rapid employee growth brings in new hires with diverse backgrounds and fresh perspectives, making them less prone to organizational conformity pressures and more likely to question supervisory decisions, although new employees may take longer to gain institutional knowledge and expertise in fraud detection compared to veteran employees. Furthermore, newer employees typically exhibit lower organizational loyalty, which lowers their psychological

barriers to reporting misconduct. Thus, higher employee growth rates are likely correlated with larger populations of individuals willing to serve as ECWs.

In summary, we state our hypotheses for the determinants of involving ECWs in securities litigation as follows:

H1: The involvement of ECWs is negatively associated with public information of accounting irregularities.

H2: The involvement of ECWs is positively associated with the occurrence of significant negative market events.

H3: The involvement of ECWs is positively associated with the presence of whistleblowers.

H4: The involvement of ECWs is positively associated with the population of employees possessing misstatement-related information.

2.3.Hypotheses Development for the Effects of ECWs

Next, we turn to the impact of ECWs on the process and outcomes of securities litigation. ECW involvement may have mixed effects on settlement likelihood. Courts understand that ECWs face the retaliation risk, which may enhance the perceived credibility of ECW testimony and increase the probability of settlement. However, the confidentiality nature of these witnesses poses verification challenges that can undermine the reliability of their statements. Moreover, judges may suspect that ECWs could exaggerate their employers' wrongdoing or withhold important details (Rakoff [2014]), leading to skepticism that could lower settlement probability. Despite these countervailing forces, we expect that ECW involvement will ultimately boost the overall likelihood of settlement, given the pervasive use of ECWs in securities litigation.

The impact of ECWs on litigation duration is similarly complex. The information provided by ECWs is often soft in nature (e.g., oral statements rather than documentary

evidence), requiring plaintiffs to gather additional evidence to meet pleading standards. This increased evidentiary burden can prolong the litigation process, especially when sympathetic courts allow plaintiffs multiple opportunities to refine their complaints. However, when ECW information is robust enough to meet pleading standards independently or effectively enhances existing evidence, their involvement could expedite resolution. Given the cautious judicial approach toward ECWs documented in legal studies (e.g., Kaufman and Wunderlich [2010]), we expect that ECW involvement will generally result in a longer litigation process, as courts demand more substantiation of ECW-based claims.

Based on the above discussion, we propose the following hypotheses for the effects of ECWs on lawsuit settlement and duration, respectively.

H5: The involvement of ECWs is positively associated with the likelihood of settlement in shareholder litigation.

H6: The involvement of ECWs is positively associated with the duration of shareholder litigation.

3. Sample and Empirical Design

3.1.Data Sources and Sample Selection

Table 1 outlines our selection procedure. We start with a total of 6,322 SCA lawsuits filed between January 1, 1996 and December 31, 2022, from the SCAC database. We obtain basic information for each lawsuit, including defendant firms, filing dates, start and end dates of the class period, courts, complaint files, and lawsuit outcomes (dismiss or settle). Following prior literature (Donelson et al. [2021], Huang et al. [2023]), we define financial misstatement period as the class action period. We remove lawsuits that do not allege violations of Section 10 of the Exchange Act (1,653 cases), those involving

misconduct of mutual funds, IPO underwriting, and financial analysts (366 cases), ongoing cases as of December 31, 2022 (373 cases), those missing information of the complaint filing date or class period (7 cases), lawsuits against firms not domiciled in the United States or not listed on a US stock exchange (678 cases), and cases involving defendant firms without Compustat or CRSP identifiers (166 cases).

For the remaining sample, we remove 235 lawsuits that lack complaint files in the SCAC database, as we collect ECW information from these files. In addition, prior to the Second Circuit's ruling in *Novak v. Kasaks* in 2000, the identifies of witnesses in private actions may not have been kept confidential (Mark [2011]). The Second Circuits made it clear in 2000 that witnesses do not need to be identified by name and the other circuits follow the suit afterward. Therefore, we drop 1,106 cases filed before the circuits allowed witnesses to maintain their confidentiality.[6] After further requiring the lawsuits to have available data for regression analyses, we arrive at a final sample of 1,447 SCAs.

We manually read the complaint files of each SCA to collect ECW information. To identify the involvement of ECWs, we search for the following keywords: "confidential witness," "confidential informant," "confidential resource," and "former employee." Once we identify a confidential witness, we determine whether he/she is a current or former employee of the defendant firm based on the complaint descriptions. Appendix A provides examples of ECW descriptions in litigation complaints. We then construct two measures: (1) *DECW*, a dummy variable that equals one if the complaint lists at least one ECW and zero otherwise; (2) *NECW*, the natural logarithm of one plus the number of ECWs in a

[6] The following is a summary of the year and the circuits that issued the rulings from the year: 2000 (2nd Circuit), 2001 (8th Circuit), 2002 (1st and 5th Circuits), 2003 (10th Circuit), 2004 (3rd Circuit), 2005 (9th Circuit), 2007 (4th Circuit), 2008 (7th and 11th Circuits), 2009 (6th Circuit).

complaint. *DECW* and *NECW* indicate the presence and prevalence of ECWs in SCA cases, respectively.

As for other data sources, we collect financial data, stock prices, institutional holdings and insider trading, restatements and internal control weaknesses, auditor changes and executive turnovers, and employee satisfaction from Compustat, CRSP, Thomson Reuters, Audit Analytics, Capital IQ Key Developments, and Glassdoor, respectively.

3.2.Empirical Design for the Determinants of ECW Involvement

To examine the determinants of the use of ECWs in securities litigation, we estimate the following equation:

$$\begin{aligned} ECW = {} & \beta_0 + \beta_1 Accounting\ irregularities \\ & + \beta_2 Significant\ negative\ market\ events \\ & + \beta_3 Presence\ of\ whistleblowers \\ & + \beta_4 Availability\ of\ employees\ possessing\ misstatement\ related\ information \\ & + \sum \beta_i Firm\ and\ misstatement\ characteristics \\ & + Industry\ FE + Year\ FE + \varepsilon_i, \end{aligned} \quad (1)$$

where *ECW* is either *DECW* or *NECW*.

To capture public information of financial misstatements related to H1, we consider the following six accounting irregularities or corporate events during the misstatement period: (1) accounting restatements, (2) delayed SEC filings, (3) internal control weaknesses, (4) auditor changes, (5) top executive turnover, and (6) abnormal insider trading. Events 1–4 are closely linked to problematic financial disclosures. Event 5 attempts to capture top executives departure due to heightened concerns of potential litigation risks or revelations of misstatements from internal or external investigations (Li

et al. [2010]). Event 6 is considered because courts often view large or suspicious insider trading as evidence that the managers may have intentionally issued misstatements for personal gains (e.g., Sale [2002], Johnson et al. [2007]). We construct five dummy variables for events 1–5 (i.e., *Restatement*, *LateFiling*, *ICW*, *AuditorTurnover*, *ExecTurnover*). We measure abnormal insider trading (*AbnTrade*) during the misstatement period for event 6, following Cohen et al. [2012]. Additionally, given the close link between *Restatement*, *LateFiling*, *ICW*, and *AuditorTurnover*, we construct an aggregate dummy variable (*AcctEvent*) that equals one if any of these four variables equals one, and zero otherwise. H1 predicts a negative association between these measures and the involvement of ECWs in the lawsuits, i.e., a negative β_1.

To identify significant negative market events related to H2, we consider severe negative actions taken by financial analysts, credit rating agencies, and short sellers. We construct three dummy variables to indicate whether in the year before the end of misstatement period, a defendant firm experienced (1) a highly negative change in consensus analyst recommendation (*NegRecom*), defined as a change in recommendation at the bottom quintile of the sample lawsuits, (2) a downgrade or negative credit watch issued by credit rating agencies (*NegCRA*), and (3) abnormal short-sell interests (*ABSI*) that are in the top quintile of sample lawsuits, where abnormal short-sell interests are calculated following Karpoff and Lou [2010]. Again, we construct an aggregate dummy variable (*NegEvent*) that equals one if any negative market event occurs, and zero otherwise. H2 predicts a positive association between the occurrence of significant negative market events and the involvement of ECWs in the lawsuits, i.e., a positive β_2.

To test H3 about whistleblowers, we manually collect mentions of whistleblowers in securities class action complaints (*Whistleblower*).[7] We choose this approach because referring whistleblowers in the complaints files indicates that plaintiffs' attorneys are aware of them and have access to their fraud allegations. This research design avoids hindsight bias, which can occur when information about whistleblowers and/or their statements emerges only years after the misstatement is revealed. H3 predicts a positive β_3, i.e., the presence of whistleblowers is positively associated with the involvement of ECWs.

To capture the availability of employees possessing information related to financial misstatements, as stated in H4, we consider the following two measures: (1) an indicator for labor intensity (*LaborIntense*), which equals one if the most recent ratio of employee population to total assets preceding the misstatement period ending date is in the top quartile of all sample lawsuits, and zero otherwise; (2) the average percentage change in the total number of employees over the three years prior to the misstatement period ending date (*%EmpChg*), with higher employee growth indicating a larger pool of newly-hired employees during the misstatement period who are available for serving as ECWs. H4 predicts a positive association between these measures and the involvement of ECWs in the lawsuits, i.e., a positive β_4.

We consider a battery of firm and misstatement characteristics that may affect the likelihood of having ECWs. Firm characteristics include the most recent firm size (*Ln(AT)*), leverage (*Leverage*), market-to-book ratio (*MTB*), return on assets (*ROA*), and institutional ownership (*InstOwn*) immediately preceding the end of the misstatement period.

[7] We conduct a keyword search using the following words to identify the presence of whistleblowers: "whistleblow," "whistle blow," "whistle blower," "whistle-blower," "whistle blowing," "whistle-blowing," "blow the whistle," "blowing the whistle," and "blew the whistle."

Misstatement characteristics include the length of class period (*Classlength*), potential investor loss during the misstatement period (*PIL*), abnormal market reactions surrounding class period ending dates (*CAR*) and *FScore* based on Dechow et al. [2011]. Variable definitions are provided in Appendix B in detail. We further control for industry fixed effects (based on Fama-French 48 industry classification) and year fixed effects (based on complaint filing year) and adjust standard errors of coefficient estimates for year clusters.

3.3.Empirical Design for the Consequences of ECWs

We test H5 and H6 using the following equation:

$$Consequence = \beta_0 + \beta_1 ECW + \sum \beta_i Controls + Industry\ FE + Year\ FE + Circuit\ FE + \varepsilon_i, \quad (2)$$

where $Consequence$ is either the settlement or duration of a lawsuit. ECW is either *DECW* or *NECW*. By construction, the lawsuits is settled or dismissed.[8] We define a dummy variable, *Settle*, that equals to one if a lawsuit is settled, and zero otherwise. We measure the duration of a lawsuit (*Duration*) by the natural logarithm of the number of days between the end of the misstatement period and the date when the outcome is announced. We estimate equation (2) using a probit model for *Settle* and an ordinary least squares (OLS) model for *Duration*. Both H5 and H6 predict a positive β_1.

Since factors influencing the use of ECWs may also affect the settlement likelihood or litigation duration, we control for public accounting irregularities, abnormal insider trading, top executive turnover, negative market events, availability of employees with private information as well as firm and misstatement characteristics in equation (2).

[8] No lawsuit in our sample went to trial.

Moreover, as the negotiation of the settlement amount may prolong the litigation process, we include *Settle* in the regression of *Duration*. Last, we include industry, complaint filing year, and circuit fixed effects in the regressions and adjust standard errors of coefficient estimates for year clusters.

4. Empirical Results

4.1. Descriptive Statistics

Table 2, Panel A presents the distribution of SCAs in our sample by filing year. Column 1 shows that the number of SCA filings steadily increases from 2002 to 2017. The number of filings is smaller before 2009 because we remove lawsuits filed in circuits that have not officially allowed witnesses to keep their identities confidential. All circuits allowed confidential witnesses by the end of 2009. The number of lawsuits increases thereafter to above 100 until 2019, suggesting a growing trend in private litigation for enforcing securities regulations. The number of lawsuits declines from 2019 to 2022 because we exclude ongoing lawsuits. Columns 2 and 3 report the number and the proportion of lawsuits involving ECWs. On average, 45% of the sample lawsuits involve ECWs, with higher rates between 2007 and 2014. This suggests the pervasive use of ECWs in securities lawsuits. Examining settled and dismissed lawsuits separately, we observe that a higher proportion of settled lawsuits involves ECWs (53%, column 6) than dismissed lawsuits do (38%, column 9).

Table 2, Panel B reports the distribution of SCAs by Fama-French 12 industries. Consistent with findings in the prior literature (Francis et al. [1994], Kim and Skinner [2012]), there are more SCAs targeting firms in the business equipment sector, the

healthcare, medical equipment, and drugs sector, and the finance sector. While there is no significant variation in the use of ECWs across industries, we observe relatively more involvement of ECWs in the manufacturing sector and the chemicals and allied products sector. Again, the percentage of lawsuits with ECWs is higher for settled lawsuits than dismissed lawsuits.

Table 2, Panel C presents the descriptive statistics for the main variables used in our analyses. Columns 1 to 3 report the descriptive statistics for the full sample. On average, about three employees are recruited in a lawsuit (*NECW (raw)* = 2.648).[9] Around 46% of the lawsuits are settled and the average duration is 2.85 years (*Duration* (raw) = 1,042 days). About 14%, 14%, 17% and 10% of the lawsuits involve restatements (*Restatement*), delayed filings (*LateFiling*), internal control weaknesses (*ICW*) and auditor turnover (*AuditorTurnover*) during the misstatement period, respectively. Overall, nearly 30% of the lawsuits involve at least one of these accounting irregularities (*AcctEvent*). CEO or CFO depart before the misstatement revelation in 36% of the lawsuits (*ExecTurnover*) and defendant firms suffer from negative actions by analysts, credit rating agencies, or short-sellers preceding the litigation in 43% of the lawsuits (*NegEvent*). On average, defendant firms have an annualized employee growth rate of 17% over the three years before misstatement revelation, their misstatement periods last for 5.7 years (*ClassLength*), and they experience a three-day abnormal return of –23.1% when their misstatements are revealed (*CAR*).

Columns 4–7 of Table 2, Panel C present the mean value of main variables separately for settled and dismissed cases and compare the difference between the two. Relative to

[9] Among lawsuits that involve ECWs, on average about five employees are recruited.

dismissed lawsuits, settled lawsuits involve more ECWs (mean *DECW* for settled and dismissed cases are 0.528 and 0.380, respectively; mean *NECW (raw)* for settled and dismissed cases are 3.299 and 2.095, respectively), take more time to resolve (mean duration in days is 1,397 and 741 for settled and dismissed lawsuits, respectively), have a greater proportion of defendant firms with accounting irregularities (*AcctEvent*), are more likely to have whistleblowers, experience a higher employee growth (*%EmpChg*), and have poorer employee ratings (*OverallRating, RecommendStatus*, *AveRating*) during the misstatement period. Defendant firms of settled lawsuits share similar firm characteristics as those of dismissed cases (e.g., *Leverage*, *MTB*, *ROA*, *InstOwn*) except that the former is smaller than latter (*Ln(AT)*). Lastly, settled lawsuits likely involve more severe misstatements than dismissed cases, as they have longer misstatement periods (*ClassLength*), their misstatement revelation causes a greater stock price crash (*CAR*), and their stock prices are inflated to a greater extent during the misstatement period (*PIL*).

Table 2, Panel D reports the correlation matrix among our measures of ECW involvement, the settlement likelihood, litigation duration, and determinants of ECW involvement. We present the natural logarithm of the number of ECWs (*NECW*) and the number of days in the class period (*Duration*). Univariately, ECW involvement is negatively associated with the presence of most accounting irregularities (*Restatement*, *LateFiling*, *AuditorTurnover*, *AbTrade*, and *ExecTurnover*) and positively associated with the presence of negative market events (*NegRecom*, *NegCRA*, and *ABSI*), the presence of whistleblowers (*Whistleblower*), and proxies for the availability of employees possessing misstatement related information (*LaborIntense* and *%EmpChg*). ECW involvement is also positively and significantly correlated with *Settle* and the duration of the lawsuit. These

results provide preliminary support for our hypotheses regarding the determinants and consequences of hiring ECWs. Next, we turn to the multivariate analysis.

4.2.Determinants of ECW Involvement

Table 3 reports the estimation results for our H1–H4 on the determinants of ECW involvement, based on equation (1). Columns 1–5 and 6–10 present the probit model and OLS model estimates for the likelihood of ECW involvement (*DECW*) and the number of ECWs involved in a lawsuit (*NECW*), respectively. We start with the analysis of H1 regarding public information of financial misstatements in columns 1 and 6. We find that, after controlling for firm and misstatement characteristics, both *DECW* and *NECW* are significantly and negatively associated with the occurrence of accounting restatements (*Restatement*), delayed SEC filings (*LateFiling*), top executive turnovers (*ExecTurnover*), and the magnitude of abnormal insider trades (*AbTrade*). The coefficients are statistically significant at the 5% level or higher. These findings are consistent with H1, suggesting that when shareholders have sufficiently convincing evidence that meets the scienter and the particularity pleading standards, they are less likely to recruit ECWs.

Columns 2 and 7 of Table 3 examine the effects of significant negative market events on ECW involvement. The two columns show that negative actions taken by credit rating agencies (*NegCRA*) motivate shareholders to seek more information from ECWs, although negative actions by financial analysts (*NegRecomm*) and short-sellers (*ABSI*) do not have significant effect. This is likely because credit rating agencies are perceived to have more advantageous access to management for material and private information (Ahn et al. [2019], Huang et al. [2023]). The positive coefficient on *NegCRA* supports our H2 that when

shareholders observe indirect signals of misstatements, they search for information about management intent and misstatement particularities from employees.

Columns 3 and 8 of Table 3 analyze the effects of whistleblowers on ECW involvement. The coefficient on *Whistleblower* in both columns is positive but not statistically significant, failing to support our H3. Regarding the population of employees possessing misstatement related information, columns 4 and 9 of Table 3 show that both *DECW* and *NECW* are higher for misstating firms with a greater labor intensity (*LaborIntense*) or higher employee growth rate (*%EmpChg*) during the misstatement period. The results support our H4 that an increase in the employee population enhances shareholders' chance of finding employees possessing information related to misstatements.

Last, to examine the aggregate effects of our hypothesized determinants, we combine all types of determinants into one regression. As discussed in the research design section, we construct aggregate indicators for public accounting irregularities (*AcctEvent*) and negative market events (*NegEvent*). Columns 5 and 10 of Table 3 show that the likelihood and number of ECWs involved in a lawsuit continue to be significantly and negatively associated with the availability of public accounting irregularities (*AccEvent*), the magnitude of abnormal insider trades (*AbTrade*), and the occurrence of top executive turnover (*ExecTurnover*) while positively associated with the occurrence of negative market events (*NegEvent*) and employee growth rates (*%EmpChg*) during the misstatement period.

With respect to the effects of firm and misstatement characteristics on ECW involvement, Table 3 shows that shareholders of defendant firms with higher leverage (*Leverage*) and institutional ownership (*InstOwn*) are more likely to recruit and recruit

more ECWs, possibly because large stakeholders are more likely to spend resources on searching and recruiting ECWs. A longer misstatement period (*ClassLength*) is also positively associated with the involvement of ECWs, probably because employees have more opportunities to access misstatement-related information over time.

Overall, the findings in Table 3 provide supporting evidence for our H1, H2, and H4 that shareholders are less likely to involve ECWs in securities litigation when there is more publicly available information of accounting irregularities but more likely to do so when there are negative market events implying fraud and when there is a larger population of employees with access to misstatement-related information.

4.3.CW Employment Position and Information

In this section, we provide more direct evidence that some ECWs possess misstatement-related information. In particular, we examine whether the type of allegations is linked to ECWs' job positions. Prior studies suggest that accounting violations are a major form of fraud, with inflated sales revenue being the most prevalent type (Bonner et al. [1998], Pritchard and Sale [2005], Cornerstone Research [2020]). Hence, we focus on violations of generally accepted accounting principles (GAAP) and revenue-related misstatements. We posit that among the various functions and departments in a company, employees in accounting departments are most likely to possess information about GAAP violations and those in sales departments more knowledgeable about the actual sales performance. To test these predictions, we manually collect the allegation data and ECWs' job titles from complaint files.

Panel A of Table 4 reports the sample distribution of lawsuits involving allegations on accounting violations and revenue misstatements, as well as the distribution of ECWs' job positions. We identify 460 cases (32% of the litigation sample) involving GAAP violations, with 201 cases (14% of the litigation sample) specifically related to revenue misstatements. Among the 648 cases involving ECWs, 151 cases (23%) and 199 cases (31%) recruit ECWs from accounting and sales departments, with 52 cases (8%) involving ECWs from both accounting and sales departments.

Table 4, Panel B presents the multinomial logit regression results for the association between ECW job positions and allegation types. Columns 1–2 of Table 4, Panel B show the results for the likelihood of involving ECWs from accounting and non-accounting departments, respectively. We find that GAAP violations (*GAAP*) are positively and significantly associated with the likelihood of involving ECWs in both accounting and non-accounting positions. However, the χ^2 test reported at the bottom of the table indicates that the association between *GAAP* and accounting ECWs is significantly more positive than that between *GAAP* and non-accounting ECWs (χ^2 = 19.20, significant at the 1% level). This result is consistent with the notion that shareholders are more likely to obtain GAAP violation information from accounting ECWs than from non-accounting ECWs.

Columns 3–4 of Table 4, Panel B show the results for the likelihood of involving ECWs from sales and non-sales departments, respectively. Again, we find that revenue-related allegations (*Revenue*) are positively and significantly associated with the likelihood of involving ECWs from both sales and non-sales positions, but the association is significantly more positive for sales than for non-sales ECWs (χ^2 = 4.95, significant at the

1% level). These findings support the notion that shareholders are more likely to obtain fictitious revenue information from sales ECWs.

In sum, our findings about the determinants of ECW involvement and the association between ECW job positions and the underlying allegations support the hypothesis that shareholders look for information about financial misstatements from ECWs.

4.4. The Consequences of Involving ECWs in Litigation Lawsuits

In this section, we turn to the efficacy of ECWs in facilitating private enforcement of financial misstatements. Table 5 reports the estimation results for equation (2), which tests our H5–H6 for the effects of ECWs on settlement and litigation duration. Columns 1–2 show that the presence (*DECW*) and the number of ECWs (*NECW*) are positively and significantly associated with the likelihood of settlement (*Settle*), respectively.[10] This result is consistent with H5 that ECWs help strengthen plaintiff shareholders' allegations of misstatements. The economic effect is significant, as recruiting an ECW increases the likelihood of settlement by 12%, compared to the sample-level unconditional probability of settlement 46%.[11] Columns 3–4 show that both the presence and the number of ECWs are positively and significantly associated with the length of time to resolve a case (*Duration*), consistent with H6. The relationship is also economically significant, as the presence of ECWs increases case duration by 38%, or about 342 days using the mean value of duration for lawsuits without ECWs involved (= 899 days × 38%).[12]

[10] Note that six cases automatically drop from our sample lawsuits due to singletons in the logistic regression with fixed effects in Table 5 Column (1).
[11] The economic significance is calculated as the difference in predicted probability of settlement when *DECW* changes from zero to one while holding all other variables at their sample mean values.
[12] The economic significance is calculated as ($\exp^{0.322}$ -1), where 0.322 is the coefficient estimate on *DECW* in column 3 of Table 5.

To address the concern that lawsuits with and without ECWs are inherently different, we estimate equation (2) using an entropy balancing approach. Entropy balancing is a multivariate matching approach which equalizes the distribution of determinants across treatment and control samples by assigning weights to control variables (Hainmueller [2012]). Prior research finds that this method maintains sufficient power while achieving proper specification (e.g., McMullin and Schonberger [2020]), which is suitable for our analysis with a relatively small sample size. We balance on the first, second and third moments of the control variables in equation (2) and set the tolerance level at 0.01. The estimation results are reported in columns 5-8 of Table 5. We continue to find that ECW involvement is positively associated with the probability of settlement and the duration of the litigation.

To gain further insights into the effectiveness of ECWs in litigation lawsuit enforcement, we examine whether their testimonies provide the required information about defendants' intent to deceive (scienter) and the specific details of the misstatements (particularity). We collect ECWs' testimonies (i.e., their statements) from complaint files and classify the information based on the following criteria. To determine whether ECWs provide scienter information, we manually review the statement to identify whether ECWs specifically name a defendant and describe his/her actions related to the alleged misstatements.[13] For ECW statements not naming any individual defendant, we further examine whether the statement refers to defendants *as a whole* for their culpability. If so, such statements would be classified as containing scienter information as well.[14] To evaluate whether ECWs provide particularity information, we examine whether their

[13] An example statement is: "*CW X was personally told of the unlawful agreement by defendant Y.*"
[14] For example, an ECW may state that "*all defendants knew about the misstatements*."

statements contain any of the following details about financial misconduct: what, where, when, how much, and how. Specifically, "what" refers to the nature of misstatement; "where" indicates the geographic location(s) associated with the misstatement; "when" specifies the time period of misstatement; "how much" describes the quantitative magnitude of the misstatement; and "how" explains how the misstatement was concealed or how the misconduct was carried out. Appendix A provides example statements of each type.[15]

Panel A of Table 6 presents the sample distribution by the information type contained in ECWs' testimonies. First, plaintiff shareholders gather scienter and particularity information in 62% and 74% of the lawsuits involving ECWs. The results align with the intuition that detecting defendants' intent to defraud (scienter) is more challenging than observing details of the misstatements (particularity). Second, nearly half of the sample cases with ECWs acquire both scienter and particularity information (48%), while a small but not trivial portion of the sample (80 cases, 12 %) fails to collect either type of information. A closer examination on a randomly selected sample of these 80 cases reveals that plaintiffs gather misstatement-related information from other sources and use ECWs' testimonies to confirm background details about company policies or business practices.

We then modify equation (2) by replacing *ECW* with indicator variables that reflect the specific information provided by ECWs. We separately examine the following scenarios: (1) ECWs provide scienter information (*DECW_Scienter*), (2) ECWs provide

[15] All authors independently classified a test sample and reconciled their classifications. A research assistant (a master student in accounting) was then hired to perform the classification by first reconciling his classification with the authors' using the test sample and then performing the classification for all cases. Last, the authors randomly selected a sample of the research assistant's work and confirmed that the classification conforms to the guidance.

particularity information (*DECW_Particular*), and (3) ECWs provide scienter but not particularity information (*DECW_ScienterOnly*), particularity but not scienter information (*DCW_ParticularOnly*), or both types of information (*DECW_Both*). Panel B of Table 6 presents regression results for how the information content in ECW testimony affects *Settle* (columns 1–3) and *Duration* (columns 4–6). Columns 1–2 show that both scienter (*DECW_Scienter*) and particularity information (*DECW_Particular*) is positively and significantly associated with the likelihood of settlement. Untabulated statistics indicate that the difference in the coefficients between *DECW_Scienter* and *DECW_Particular* is statistically insignificant. Column 3 shows that the coefficient on *DECW_Both* is insignificantly different from that on *DECW_ScienterOnly* and *DECW_ParticularOnly*, suggesting that presenting both types of information simultaneously does not strengthen the case than presenting just one type. Columns 4–6 offer similar insight for the impact of ECWs' information content on lawsuit duration. Overall, Table 6 supports the idea that shareholders use ECWs to fulfill the information requirements established by pleading standards in securities class actions.

Taken together, our results in Tables 5–6 suggest that ECWs provide misstatement-related information that increases the settlement likelihood of SCAs and prolongs the duration of the litigation.

5. Additional Analysis

While our previous analysis indicates that the involvement of ECWs increases the likelihood of SCA settlements, the settlement mostly benefits shareholders rather than the ECWs themselves. The monetary compensation ECWs receive from shareholders may not

adequately cover the potential costs of retaliation from their (former) employers. Furthermore, many employees rely on their employers for job security, compensation, pensions, and career advancement, all of which could be at risk if they expose misstatements (Choi and Gipper [2024]). Then, what factors, aside from financial benefits and costs, might motivate employees to serve as ECWs? We explore this question in this section.

Butler et al. [2020] suggest that in addition to financial rewards, social approval strongly motivate whistleblowers. We conjecture that the same motivation also applies to ECWs. Specifically, the negative impact of job loss and wage cuts caused by financial disclosure fraud may lead employees to feel it socially acceptable to hold management accountable (Choi and Gipper [2024]). Consistent with this conjecture, Teoh et al. [2023] show that employee satisfaction decreases after the exposure of financial misconduct. Moreover, if employees are less satisfied with management leadership, compensation and welfare, and corporate culture, they are more likely to be skeptical of management's ethics. This can increase their tendency to associate irregular transactions with misstatements and their willingness to testify against management when misstatements are revealed. Following a similar line of reasoning, Call et al. [2016] find that management committing financial misreporting attempt to boost employee satisfaction through bribery. Hence, we expect that employee satisfaction is inversely related to the involvement of ECWs.

To capture employee satisfaction with their employers, we use employee ratings from Glassdoor.com. We focus on the overall rating (*OverallRating*), recommendation status (*RecommendStatus*), and the average ratings across five detailed dimensions (*AvgRating*).[16]

[16] The five dimensions refer to (1) Culture & Values, (2) Work/Life Balance, (3) Senior Management, (4) Compensation and Benefits, and (5) Career Opportunities.

OverallRating and *AvgRating* range between 1 and 5, *RecommendStatus* ranges between –1 and 1.[17] We require a minimum of three Glassdoor reviews during the two years preceding the misstatement period ending date, which substantially reduces the sample size from 1,447 cases to 635 cases. We estimate the following model to test the association between employee satisfaction and ECW involvement:

$$ECW = \beta_0 + \beta_1 Ratings + \sum \beta_i Firm\ and\ misstatement\ characteristics + Industry\ FE + Year\ FE + \varepsilon_i, \quad (3)$$

where ECW is either *DECW* or *NECW*. $Ratings$ is one of the employee ratings (*OverallRating*, *ReommendStatus*, and *AvgRating*). Other variables are defined as in equation (1).

Panel C of Table 2 shows that employee satisfaction ratings for the defendant firm (*OverallRating*) and the defendant management (*AveRating*) are on average both around 3 on a scale of 5. Table 7 presents regression results for equation (3), with columns 1–3 and columns 4–6 showing the effects of employee satisfaction on the likelihood and the number of ECWs involved, respectively. All columns report a significantly negative coefficient on $Ratings$, suggesting that lower employee approval of management strengthens employees' incentive to serve as ECWs and testify against their firms.

To corroborate our findings in Table 7 about employee incentives, we explore the association between employee ratings and the type of information provided by ECWs in their testimony. We expect that greater disapprovals of management correlate with stronger incentives to provide more comprehensive testimony against misstatements. To test this,

[17] For recommendation status which is not on a scale of 1 to 5, we translate positive/approve rating to 1, neutral rating to 0, and negative/disapprove rating to –1.

we modify equation (3) by replacing the dependent variable with two indicator variables: *DECW_Either* and *DECW_Both*, where *DECW_Either* indicates that involved ECWs provide only scienter information or particularity information, but not both, and *DECW_Both* indicates that involved ECWs provide both types of information. We run a multinomial logit regression model and present the results in Table 8. The table shows a significantly negative coefficient on $Ratings$ in columns 2, 4, and 6 when the dependent variable is *DECW_Both*. In contrast, the coefficient on $Ratings$ becomes insignificant in columns 1, 3, and 5 when the dependent variable is *DECW_Either*. The χ^2 statistics reported at the bottom of the table indicates that the coefficient on *DECW_both* is significantly more negative than that on *DECW_Either* across all three ratings of employee satisfaction. These findings support our expectation that employee dissatisfaction increases ECWs' incentives to disclose more information about misstatements in the litigation process. In sum, Tables 7–8 provide additional insight for when employees might be willing to act as ECWs.

6. Conclusion

This study explores the determinants and consequences that shareholders hire corporate employees as confidential witnesses (ECWs) in private lawsuits related to fraudulent financial disclosures. We expect that shareholders will consider the benefits and costs of obtaining insider information from employees compared to other sources. Analyzing 1,447 securities class action lawsuits from 2002 to 2022, we find that the use of ECWs declines when there is ample public information on accounting irregularities that already provides strong indication about management intent to deceive, such as accounting

restatements, late filings of financial reports, top executive turnovers, and abnormal insider trading during the misstatement period. Conversely, ECWs usage increases in response to significant negative market events that only hint at potential fraud, like credit rating downgrades and abnormal short selling. Furthermore, shareholders are more inclined to hire ECWs when targeted firms have higher labor intensity and higher employee growth rates, as these firms are likely to have a larger population of employees with knowledge of misstatements. Additional analyses reveal that employees in specific roles, like accountants or salespersons, are more knowledgeable about misstatements related to their job positions, such as GAAP violations or revenue misstatements. Finally, we find that lower employee satisfaction correlates with greater involvement of ECWs in the lawsuits.

The involvement of ECWs increases both the likelihood of case settlement and the time required to resolve a case. Moreover, when ECWs provide more specific information about misstatements, such as scienter information about management's intent to defraud or particularity information about misstatement details, alleged firms face a higher likelihood of settlement. These findings support the expectation that ECWs provide useful evidence that contributes to higher litigation costs for defendants.

Taken together, our findings uncover the determinants and the efficacy of using ECWs in shareholder actions on financial disclosure fraud. Our paper highlights the effectiveness of ECWs in disciplining management from financial disclosure fraud through private enforcement actions and enhances the understanding of the informational role of rank-and-file employees.

References

AHN, M.; S. B. BONSALL; and A. VAN BUSKIRK. "Do managers withhold bad news from credit rating agencies?" *Review of Accounting Studies* **24** (2019): 972-1021.

AUTORE, D. M.; I. HUTTON; D. R. PETERSON; and A. H. SMITH. "The effect of securities litigation on external financing." *Journal of Corporate Finance* **27** (2014): 231-250.

BERGER, P. G., and H. LEE. "Did the Dodd–Frank Whistleblower Provision Deter Accounting Fraud?" *Journal of Accounting Research* **60** (2022): 1337-1378.

BONNER, S. E.; Z.-V. PALMROSE; and S. M. YOUNG. "Fraud Type and Auditor Litigation: An Analysis of SEC Accounting and Auditing Enforcement Releases." *The Accounting Review* **73** (1998): 503-532.

BOWEN, R. M.; A. C. CALL; and S. RAJGOPAL. "Whistle-Blowing: Target Firm Characteristics and Economic Consequences." *The Accounting Review* **85** (2010): 1239-1271.

BROCHET, F., and S. SRINIVASAN. "Accountability of independent directors: Evidence from firms subject to securities litigation." *Journal of Financial Economics* **111** (2014): 430-449.

BUTLER, J. V.; D. SERRA; and G. SPAGNOLO. "Motivating Whistleblowers." *Management Science* **66** (2020): 605-621.

CALL, A. C.; S. KEDIA; and S. RAJGOPAL. "Rank and file employees and the discovery of misreporting: The role of stock options." *Journal of Accounting and Economics* **62** (2016): 277-300.

CALL, A. C.; G. S. MARTIN; N. Y. SHARP; and J. H. WILDE. "Whistleblowers and Outcomes of Financial Misrepresentation Enforcement Actions." *Journal of Accounting Research* **56** (2018): 123-171.

CAMPBELL, D. W., and R. SHANG. "Tone at the Bottom: Measuring Corporate Misconduct Risk from the Text of Employee Reviews." *Management Science* **68** (2022): 7034-7053.

CASKEY, J., and N. B. OZEL. "Earnings expectations and employee safety." *Journal of Accounting and Economics* **63** (2017): 121-141.

CHEN, P.-C. "Banks' Acquisition of Private Information about Financial Misreporting." *The Accounting Review* **91** (2016): 835-857.

CHEN, Z.; N. LI; and J. SHEN. "Litigation Risk and Debt Contracting: Evidence from a Natural Experiment." *The Journal of Law and Economics* **63** (2020): 595-630.

CHENG, C. S. A.; H. H. HUANG; Y. LI; and G. LOBO. "Institutional monitoring through shareholder litigation." *Journal of Financial Economics* **95** (2010): 356-383.

CHOI, J. H., and B. GIPPER. "Fraudulent Financial Reporting and the Consequences for Employees." *Journal of Accounting and Economics* **78** (2024): 101673.

CHOI, S. J. "Do the Merits Matter Less After the Private Securities Litigation Reform Act?" *The Journal of Law, Economics, and Organization* **23** (2007): 598−626.

COHEN, L.; C. MALLOY; and L. POMORSKI. "Decoding Inside Information." *The Journal of Finance* **67** (2012): 1009−1043.

CORNERSTONE RESEARCH. "Securities Class Action Filings - 2019 Year in Review." 2020.

DECHOW, P. M.; W. GE; C. R. LARSON; and R. G. SLOAN. "Predicting Material Accounting Misstatements." *Contemporary Accounting Research* **28** (2011): 17−82.

DEHAAN, E.; N. LI; and F. S. ZHOU. "Financial Reporting and Employee Job Search." *Journal of Accounting Research* **61** (2023): 571-617.

DENG, S.; R. H. WILLIS; and L. XU. "Shareholder Litigation, Reputational Loss, and Bank Loan Contracting." *Journal of Financial and Quantitative Analysis* **49** (2014): 1101-1132.

DESAI, H.; S. KRISHNAMURTHY; and K. VENKATARAMAN. "Do Short Sellers Target Firms with Poor Earnings Quality? Evidence from Earnings Restatements." *Review of Accounting Studies* **11** (2006): 71-90.

DONELSON, D. C.; A. KARTAPANIS; J. MCINNIS; and C. G. YUST. "Measuring Accounting Fraud and Irregularities Using Public and Private Enforcement." *The Accounting Review* **96** (2021): 183-213.

DYCK, A.; A. MORSE; and L. ZINGALES. "Who Blows the Whistle on Corporate Fraud?" *The Journal of Finance* **65** (2010): 2213−2253.

FAN, Y.; G. HILARY; and M. S. MA 'Are Unsubstantiated Employee Whistleblowers Detrimental?,' Unpublished paper, Hong Kong Polytechnic University, 2025. Available at https://ssrn.com/abstract=4548362.

FARHADI, R., and V. NANDA. "What do employees know? Quality perception and 'over-satisfaction' in firms going public." *Journal of Corporate Finance* **66** (2021): 101779.

FRANCIS, J.; D. PHILBRICK; and K. SCHIPPER. "Shareholder Litigation and Corporate Disclosures." *Journal of Accounting Research* **32** (1994): 137-164.

GAO, X., and Y. JIA. "The Economic Consequences of Financial Misreporting: Evidence from Employee Perspective." *Journal of Management Accounting Research* **33** (2021): 55-76.

GREEN, T. C.; R. HUANG; Q. WEN; and D. ZHOU. "Crowdsourced employer reviews and stock returns." *Journal of Financial Economics* **134** (2019): 236-251.

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

HEESE, J.; R. KRISHNAN; and H. RAMASUBRAMANIAN. "The Department of Justice as a gatekeeper in whistleblower-initiated corporate fraud enforcement: Drivers and consequences." *Journal of Accounting and Economics* **71** (2021): 101357.

HILARY, G.; X. TIAN; and M. YU. "Does Meeting Financial Expectations Boost Employee Satisfaction?" *The Accounting Review* **100** (2025): 277–302.

HOPKINS, J. "Do Securities Class Actions Deter Misreporting?" *Contemporary Accounting Research* **35** (2018): 2030-2057.

HOUSTON, J. F.; C. LIN; S. LIU; and L. WEI. "Litigation Risk and Voluntary Disclosure: Evidence from Legal Changes." *The Accounting Review* **94** (2019): 247-272.

HUANG, A. H.; P. KRAFT; and S. WANG. "The Usefulness of Credit Ratings for Accounting Fraud Prediction." *The Accounting Review* (2023): 1-30.

HUANG, K.; M. LI; and S. MARKOV. "What Do Employees Know? Evidence from a Social Media Platform." *The Accounting Review* **95** (2020): 199-226.

JI, Y.; O. ROZENBAUM; and K. WELCH 'Who Experiences Financial Reporting Pressure?,' Unpublished paper, The University of Texas at Arlington, 2022. Available at https://ssrn.com/abstract=4094290 or http://dx.doi.org/10.2139/ssrn.4094290.

JI, Y.; O. ROZENBAUM; and K. WELCH 'Corporate Culture and Financial Reporting Risk: Looking Through the Glassdoor,' Unpublished paper, The Hong Kong Polytechnic University, 2024. Available at https://ssrn.com/abstract=2945745.

JOHNSON, M. F.; K. K. NELSON; and A. C. PRITCHARD. "Do the Merits Matter More? The Impact of the Private Securities Litigation Reform Act." *The Journal of Law, Economics, and Organization* **23** (2007): 627-652.

JOYNT, S. W. 'Fitch Ratings,' in *Book Fitch Ratings*, edited by Editor. City, 2002.

KARPOFF, J. M., and X. LOU. "Short Sellers and Financial Misconduct." *The Journal of Finance* **65** (2010): 1879-1913.

KAUFMAN, M. J., and J. M. WUNDERLICH. "Resolving the Continuing Controversy Regarding Confidential Informants in Private Securities Fraud Litigation." *Cornell Journal of Law and Public Policy* **19** (2010): 637-690.

KIM, I., and D. J. SKINNER. "Measuring securities litigation risk." *Journal of Accounting and Economics* **53** (2012): 290−310.

LI, C.; L. SUN; and M. ETTREDGE. "Financial executive qualifications, financial executive turnover, and adverse SOX 404 opinions." *Journal of Accounting and Economics* **50** (2010): 93-110.

LICHTERMAN, A. S. "Confidential Witnesses: The Reform Act and the Battle at the Pleading Stage." *Cardozo Public Law, Policy, and Ethics Journal* **8** (2010): 609-648.

MARK, G. "Confidential Witnesses in Securities Litigation." *Journal of Corporation Law* **36** (2011): 551-606.

MARK, G. "Recanting Confidential Witnesses in Securities Litigation." *Loyola University Chicago Law Journal* **45** (2014): 575-602.

MATTHEWS, C. M., and E. GLAZER 'Exxon Draws SEC Probe Over Permian Basin Asset Valuation,' in *Book Exxon Draws SEC Probe Over Permian Basin Asset Valuation*, edited by Editor. City, 2021.

MCMULLIN, J. L., and B. SCHONBERGER. "Entropy-balanced accruals." *Review of Accounting Studies* **25** (2020): 84-119.

MILLER, G. S. "The Press as a Watchdog for Accounting Fraud." *Journal of Accounting Research* **44** (2006): 1001-1033.

PRITCHARD, A. C., and H. A. SALE. "What Counts as Fraud? An Empirical Study of Motions to Dismiss Under the Private Securities Litigation Reform Act." *Journal of Empirical Legal Studies* **2** (2005): 125−149.

RAGHUNANDAN, A. "Financial misconduct and employee mistreatment: Evidence from wage theft." *Review of Accounting Studies* **26** (2021): 867-905.

RAKOFF, J. S. "Confidential Informants and Securities Class Actions: Mixed Messages and Motives." *Loyola University Chicago Law Journal* **45** (2014): 571-574.

SALE, H. A. "Judging Heuristics." *UC Davis Law Review* **35** (2002): 903−963.

SCHANTL, S. F., and A. WAGENHOFER. "Deterrence of financial misreporting when public and private enforcement strategically interact." *Journal of Accounting and Economics* **70** (2020): 101311.

STUBBEN, S. R., and K. T. WELCH. “Evidence on the Use and Efficacy of Internal Whistleblowing Systems.” *Journal of Accounting Research* **58** (2020): 473-518.

TEOH, S. H.; Y. ZHOU; and C. MAKRIDIS 'Understanding Reputation Damage to Firm Culture: Insights from Employee Perceptions Post Financial Misconduct,' Unpublished paper, University of California at Los Angeles, 2023. Available at Available at SSRN: https://ssrn.com/abstract=3467787 or http://dx.doi.org/10.2139/ssrn.3467787.

WILDE, J. H. “The Deterrent Effect of Employee Whistleblowing on Firms' Financial Misreporting and Tax Aggressiveness.” *The Accounting Review* **92** (2017): 247-280.

YANG, J.; Y. YU; and L. ZHENG. “The Impact of Shareholder Litigation Risk on Equity Incentives: Evidence from a Quasi-Natural Experiment.” *The Accounting Review* **96** (2021): 427-449.

Appendix A
ECW Background Descriptions and Statements in Litigation Complaints

Panel A: Examples of ECW Background Descriptions

1. "This practice was also described by CW 12, a former Order Entry Manager in Sunnyvale, California from 2005 to June 2009." (*In Re: Arthrocare Corporation Securities Litigation*)
2. "Confidential Witness Number 2 ("CW2") is a former Reddy Ice employee that held several different positions at Reddy Ice during the Class Period and specifically from January 2006 through March 2008, including: (i) Internal Auditor, (ii) Area Controller, and (iii) Utilities Specialist." (*In Re: John Chamberlain, et al. v. Reddy Ice Holdings, Inc., et al.*)

Panel B: Examples of ECW Statements

Example 1: *In Re: Arthrocare Corporation Securities Litigation*

A. "This practice was also described by CW 12, a former Order Entry Manager in Sunnyvale, California from 2005 to June 2009. Up until approximately the last six months of CW 12's employment, every quarter and year end Boracchia and another large distributor, State of the Art ("SOTA"), made large orders on the last day of the quarter and the fiscal year. In approximately January 2009, the Company became more careful and the sales practices a bit more discrete because of ongoing internal investigations."

B. "If ArthroCare had already hit its quarterly targets, Costelli or Raffle would contact CW 12 by phone or email and tell her to have her department stop entering orders. At quarter end, for every quarter and every fiscal year during CW 12's employment, CW 12 received a phone call or email from Costelli or Raffle telling CW 12 "which orders to enter, and which orders not to enter." Costelli and Raffle "let them know when to cut it off." Costelli or Raffle never explained the practice explicitly. Costelli would tell CW 12 to stop "because we'd hit our number." It seemed clear this was an effort to shift orders after this quarter's numbers were met, to start the next quarter with some sales and progress towards sales goals."

Information in above ECW statements is classified into alternative types of particularities as below:

(1) What: *Boracchia and another large distributor, State of the Art ("SOTA"), made large orders on the last day of the quarter and the fiscal year…. If ArthroCare had already hit its quarterly targets, Costelli or Raffle would contact CW 12 by phone or email and tell her to have her department stop entering orders. At quarter end, for every quarter and every fiscal year during CW 12's employment, CW 12 received a phone call or email from Costelli or Raffle telling CW 12 "which orders to enter, and which orders not to enter."*

(2) When: *Up until approximately the last six months of CW 12's employment, every quarter and year end*.

(3) How: *At quarter end, for every quarter and every fiscal year during CW 12's employment, CW 12 received a phone call or email from Costelli or Raffle telling CW 12 "which orders to enter, and which orders not to enter." Costelli and Raffle "let them know when to cut it off." Costelli or Raffle never explained the practice explicitly. Costelli would tell CW 12 to stop "because we'd hit our number." It seemed clear this was an effort to shift orders after this quarter's numbers were met, to start the next quarter with some sales and progress towards sales goals.*

Example 2: *In Re: Acuity Brands Inc. Securities Litigation*

"Former Acuity employees also described multiple specific transactions involving large amounts of prematurely shipped product at quarter-end. For example, CW 16 recalled one project involving Primary Corporate Account #1, one of Acuity's major corporate accounts. CW 16 stated that Acuity supplied over seventy Primary Corporate Account #1 mall and parking lot projects around the U.S. in 2015 and 2016. During this timeframe, CW 16 stated that Acuity prematurely shipped products to projects in California and on the East Coast in order to meet quarter and year-end sales goals. CW 16 stated that the prematurely shipped orders involved all types of LED fixtures, including indoor and outdoor, and also included "smart" lighting products. CW 16 stated her belief that the premature shipments involved orders ranging from $200 thousand up to $1 million."

Information in above ECW statements is classified into alternative types of particularities as below:

(1) What: *prematurely shipped products to projects in California and on the East Coast in order to meet quarter and year-end sales goals*.

(2) When: *in 2015 and 2016.*

(3) Where: *California and on the East Coast.*

(4) How: *prematurely shipped products […] the prematurely shipped orders involved all types of LED fixtures, including indoor and outdoor, and also included "smart" lighting products.*

(5) How much: *ranging from $200 thousand up to $1 million.*

Appendix B
Variable Definition

Variable	Definition
Dependent Variables	
DECW	A dummy variable set to one if the complaint lists at least one ECW, and zero otherwise.
NECW	The natural logarithm of one plus the number of ECWs in a complaint.
NECW (raw)	The number of ECWs in a complaint.
Settle	A dummy variable set to one if the case is settled and zero if it is dismissed.
Duration	The natural logarithm of the length in days between the class period ending date and the first date on which a dismissal/settlement decision is made.
Duration (raw)	The length in days between the class period ending date and the first date on which a dismissal/settlement decision is made.
Determinants of ECWs	
Restatement	A dummy variable set to one if the defendant firm makes accounting restatements during the misstatement period, and zero otherwise.
LateFiling	A dummy variable set to one if the defendant firm delays SEC filings during the misstatement period, and zero otherwise.
ICW	A dummy variable set to one if the defendant firm reports internal control weaknesses during the misstatement period, and zero otherwise.
AuditorTurnover	A dummy variable set to one if the defendant firm experiences auditor changes during the misstatement period, and zero otherwise.
AcctEvent	A dummy variable set to one if the defendant firm makes accounting restatements, delays filings, discloses internal control weaknesses or changes auditor during the misstatement period, and zero otherwise.
AbTrade	Total number of shares that insiders traded during the misstatement period minus total number of shares that insiders traded during a pre-misstatement period with the same length, scaled by total number of shares outstanding at the beginning of the respective period.
ExecTurnover	A dummy variable set to one if the defendant firm experiences CEO or CFO turnover during the misstatement period, and zero otherwise.
NegRecom	An indicator for highly negative change in consensus analyst recommendation in the year preceding the misstatement period ending date. It is set to one if the change in consensus analyst recommendation is in the bottom quintile of sample lawsuits and zero otherwise.

Variable	Definition
NegCRA	An indicator for negative credit rating actions (including rating downgrades and negative credit watch) in the year preceding the misstatement period ending date.
ABSI	An indicator for abnormal short-sell interests in the year preceding the misstatement period ending date. It is set to one if abnormal short-sell interests are in the top quintile of sample lawsuits and zero otherwise. Anormal short interest is calculated following Karpoff and Lou [2010].
NegEvent	A dummy variable set to one if the defendant firm experiences any type off negative market events (including *NegRecom*, *NegCRA*, *ABSI* during the year preceding the misstatement period ending date.
LaborIntense	An indicator for labor intensive firms, which equals one if the ratio of number of employees to total assets at the end of year preceding the misstatement period ending date is in the top quartile of sample lawsuits, and zero otherwise.
%EmpChg	The average percentage change in the total number of employees over the three years prior to the misstatement period ending date.
OverallRating	The average value of Glassdoor employee ratings for the defendant firm during two years before the misstatement period, which ranges between 1 and 5.
RecommendStatus	The average value of Glassdoor Recommend status for the defendant firm during two years before the misstatement period, which ranges between –1 and 1.
AveRating	The average value of five employee ratings on Glassdoor for the defendant firm during two years before the misstatement period: Work Life Balance, Culture Values, Career Opportunities, Compensation and Benefits and Senior Management.
Control Variables	
Ln(AT)	Natural logarithm of total assets in millions of US dollars at the end of the most recent fiscal year before the misstatement period ending date.
Leverage	The ratio of total liability to total assets at the end of the most recent fiscal year before the misstatement period ending date.
MTB	The ratio of the market value of equity to the book value of equity at the end of the most recent fiscal year before the misstatement period ending date.
ROA	The ratio of income before extraordinary items in the most recent fiscal year before the misstatement period ending date to beginning total assets.
InstOwn	Percentage of shares owned by institutional investors at the end of the most recent calendar quarter before the misstatement period ending date.

Variable	Definition
ClassLength	The natural logarithm of the length of the class period in days.
CAR	The three-day cumulative abnormal return surrounding the class period ending date.
PIL	Potential investor loss, calculated as the difference between the highest value of the market capitalization during the class period and the market capitalization on the day after the end of the class period, scaled by the market value at the most recent fiscal year-end preceding the class period end date.
Information Type	
DECW_Scienter	A dummy variable set to one if any of the ECWs' statements includes information about defendants' intent to deceive (scienter), and zero otherwise. A statement is considered to include information about scienter if it specifically names a defendant and describe his/her actions related to the alleged misstatement or targets defendants as a whole for their culpability.
DECW_Particular	A dummy variable set to one if any of the ECWs' statements includes information about defendants' intent to deceive, and zero otherwise. A statement is considered to include information about particularity if it mentions any of the following: refers to the nature of misstatement ("what"); the geographic location(s) associated with the misstatement ("where"); the time period of misstatement ("when"); the quantitative magnitude of the misstatement ("how much"); how the misstatement was concealed or how the misconduct was carried out ("how").
DECW_ScienterOnly	A dummy variable set to one if any of the ECWs' statements includes information about scienter and does not include information about particularity, and zero otherwise.
DECW_ParticularOnly	A dummy variable set to one if any of the ECWs' statements includes information about particularity and does not include information about scienter, and zero otherwise.
DECW_Both	A dummy variable set to one if any of the ECWs' statements includes information about both scienter and particularity, and zero otherwise.
DECW_Either	A dummy variable set to one if any of the ECWs' statements includes information about either scienter or particularity but not both, and zero otherwise

Table 1
Sample Selection

This table presents the procedures used to select our sample of financial misstatement events from the Securities Class Action Clearinghouse (SCAC) database.

	#Cases
Securities Class Action Filings in SCAC database from 1996 to 2022	6,322
Drop: Non-Section 10 cases	(1,653)
Cases against IPO, mutual fund, analysts misconducts	(366)
On-going cases	(373)
Cases missing complaint filing dates or class period	(7)
Cases against non-US firms and firms listed in foreign exchanges	(678)
Cases missing GVKEY or PERMNO for the defendant firm	(166)
Cases missing complaints	(235)
Cases filed before the circuits allowed witnesses to maintain their confidentiality	(1,106)
Cases missing main variables for regression analysis	(291)
Final sample	**1,447**

Table 2
Descriptive Statistics

This table presents the descriptive statistics for sample distribution and misstatement characteristics. Panels A and B present the sample distribution by year and industry, respectively. Panel C presents descriptive statistics for firm and misstatement characteristics. Panel D presents the correlation matrix of main variables of interest. Statistics in bold represent significance at the 10% level and above.

Panel A: Yearly Distribution of Sample Lawsuits

	Full Sample			Settled			Dismissed		
Year	#Cases	# Cases with ECW	%ECW	#Cases	# Cases with ECW	%ECW	# Cases	# Cases with ECW	%ECW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002	12	3	25%	8	2	25%	4	1	25%
2003	29	12	41%	15	5	33%	14	7	50%
2004	30	12	40%	19	7	37%	11	5	45%
2005	51	33	65%	30	23	77%	21	10	48%
2006	61	24	39%	38	17	45%	23	7	30%
2007	70	44	63%	43	30	70%	27	14	52%
2008	89	44	49%	44	28	64%	45	16	36%
2009	67	43	64%	30	24	80%	37	19	51%
2010	68	42	62%	28	20	71%	40	22	55%
2011	67	36	54%	31	17	55%	36	19	53%
2012	83	46	55%	41	28	68%	42	18	43%
2013	95	53	56%	42	32	76%	53	21	40%
2014	90	46	51%	53	29	55%	37	17	46%
2015	98	24	24%	41	10	24%	57	14	25%
2016	112	36	32%	48	16	33%	64	20	31%
2017	114	44	39%	45	21	47%	69	23	33%
2018	111	35	32%	45	15	33%	66	20	30%
2019	104	38	37%	43	16	37%	61	22	36%
2020	60	20	33%	12	5	42%	48	15	31%
2021	28	10	36%	7	5	71%	21	5	24%
2022	8	3	38%	2	1	50%	6	2	33%
Total	**1,447**	**648**	**45%**	**665**	**351**	**53%**	**782**	**297**	**38%**

Table 2, Continued

Panel B: Industry Distribution of Sample Lawsuits

Industry Sector	Full Sample			Settled			Dismissed		
	#Case	# Case w/ ECW	%ECW	#Case	# Case w/ ECW	%ECW	#Case	# Case w/ ECW	%ECW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Equipment - Computers, Software, and Electronic Equipment	298	136	46%	144	76	53%	154	60	39%
Chemicals and Allied Products	25	14	56%	11	7	64%	14	7	50%
Consumer Durables - Cars, TV's, Furniture, Household Appliances	36	15	42%	12	8	67%	24	7	29%
Consumer NonDurables - Food, Tobacco, Textiles, Apparel, Leather, Toys	61	23	38%	16	8	50%	45	15	33%
Finance	216	95	44%	104	54	52%	112	41	37%
Healthcare, Medical Equipment, and Drugs	354	151	43%	165	79	48%	189	72	38%
Manufacturing - Machinery, Trucks, Planes, Off Furn, Paper, Com Printing	92	48	52%	48	30	63%	44	18	41%
Oil, Gas, and Coal Extraction and Products	36	15	42%	17	8	47%	19	7	37%
Telephone and Television Transmission	38	13	34%	18	5	28%	20	8	40%
Utilities	14	4	29%	10	4	40%	4	0	0%
Wholesale, Retail, and Some Services (Laundries, Repair Shops)	134	54	40%	54	27	50%	80	27	34%
Other - Mines, Constr, BldMt, Trans, Hotels, Bus Serv, Entertainment	143	80	56%	66	45	68%	77	35	45%
Total	**1,447**	**648**	**45%**	**665**	**351**	**53%**	**782**	**297**	**38%**

Table 2, Continued

Panel C: Descriptive Statistics

	Full Sample			Settled	Dismissed	Diff (4)–(5)	*p*-value
	Mean	Median	Std	Mean	Mean		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DECW	0.448	0.000	0.497	0.528	0.380	0.148	**0.000**
NECW (raw)	2.648	0.000	4.422	3.299	2.095	1.205	**0.000**
NECW (in log)	0.776	0.000	0.959	0.938	0.637	0.301	**0.000**
Settle	0.460	0.000	0.499	1.000	0.000	1.000	**0.000**
Duration (raw)	1,042	925	662	1,397	741	656	**0.000**
Duration (in log)	6.703	6.831	0.811	7.141	6.330	0.810	**0.000**
Restatement	0.135	0.000	0.342	0.167	0.109	0.058	**0.001**
LateFiling	0.135	0.000	0.342	0.150	0.121	0.029	0.109
ICW	0.171	0.000	0.376	0.195	0.150	0.046	**0.021**
AuditorTurnover	0.096	0.000	0.295	0.117	0.078	0.039	**0.012**
AcctEvent	0.307	0.000	0.461	0.350	0.270	0.081	**0.001**
AbTrade	0.005	0.000	0.111	0.005	0.005	0.000	0.942
ExecTurnover	0.357	0.000	0.479	0.362	0.353	0.009	0.708
NegRecom	0.215	0.000	0.411	0.230	0.202	0.028	0.196
NegCRA	0.091	0.000	0.287	0.095	0.087	0.008	0.608
ABSI	0.209	0.000	0.407	0.220	0.199	0.020	0.350
NegEvent	0.425	0.000	0.495	0.429	0.422	0.007	0.801
Whistleblower	0.088	0.000	0.284	0.120	0.061	0.059	**0.000**
LaborIntense	0.248	0.000	0.432	0.250	0.247	0.003	0.902
%EmpChg	0.171	0.070	0.358	0.195	0.152	0.043	**0.022**
CAR	-0.231	-0.188	0.192	-0.251	-0.215	-0.036	**0.000**
PIL	0.972	0.639	1.252	1.093	0.869	0.225	**0.001**
ClassLength	5.737	5.811	1.021	5.788	5.693	0.095	**0.076**
FScore	-6.077	-6.006	0.852	-5.986	-6.153	0.167	**0.000**
Ln(AT)	7.194	7.001	2.350	7.047	7.320	-0.273	**0.028**
Leverage	0.252	0.187	0.266	0.257	0.247	0.011	0.448
MTB	4.390	2.798	9.070	4.218	4.536	-0.317	0.507
ROA	-0.092	0.017	0.388	-0.102	-0.084	-0.018	0.371
InstOwn	0.495	0.585	0.393	0.482	0.506	-0.024	0.244
OverallRating	3.165	3.213	0.640	3.012	3.290	-0.278	**0.000**
RecommendStatus	0.077	0.121	0.455	-0.026	0.161	-0.188	**0.000**
AveRating	3.094	3.100	0.565	2.962	3.203	-0.241	**0.000**

Table 2, Continued

Panel D: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) *DECW*	1														
(2) *NECW*	**0.898**	1													
(3) *Settle*	**0.148**	**0.156**	1												
(4) *Duration*	**0.289**	**0.301**	**0.498**	1											
(5) *Restatement*	-0.023	-0.031	**0.085**	0.008	1										
(6) *LateFiling*	-0.030	**-0.045**	0.042	-0.024	**0.341**	1									
(7) *ICW*	0.020	-0.004	**0.061**	-0.011	**0.363**	**0.456**	1								
(8) *AuditorTurnover*	-0.025	**-0.050**	**0.066**	0.020	**0.173**	**0.208**	**0.151**	1							
(9) *AbTrade*	**-0.061**	**-0.057**	0.002	0.014	-0.021	0.019	0.001	0.022	1						
(10) *ExecTurnover*	-0.002	-0.013	0.010	0.024	**0.206**	**0.183**	**0.221**	**0.134**	**-0.045**	1					
(11) *NegRecom*	0.023	0.030	0.034	**0.058**	-0.020	0.025	-0.005	0.012	0.011	-0.004	1				
(12) *NegCRA*	**0.055**	**0.081**	0.014	**0.076**	0.016	-0.026	-0.022	-0.021	0.023	**0.046**	**0.052**	1			
(13) *ABSI*	0.037	0.040	0.025	0.003	**-0.049**	0.021	0.038	-0.040	-0.008	-0.010	0.021	-0.008	1		
(14) *Whistleblower*	**0.052**	**0.073**	**0.103**	**0.079**	0.026	-0.009	-0.005	-0.019	-0.035	0.042	-0.015	0.012	-0.034	1	
(15) *LaborIntense*	**0.075**	**0.094**	0.003	0.026	0.034	0.026	-0.010	0.014	0.006	0.019	-0.032	0.003	**-0.067**	0.024	1
(16) *%EmpChg*	**0.055**	0.043	**0.060**	0.036	-0.040	0.017	0.024	0.005	-0.020	**-0.062**	-0.003	**-0.067**	**0.065**	-0.033	-0.029

Table 3
Determinants of ECW Involvement

This table presents the regression estimates for the determinants of ECW involvement in private securities litigations against financial disclosure fraud. Dependent variables are the indicator (columns 1–5) and the number (columns 6–10) for ECWs involved in a lawsuit, respectively. See Appendix B for definitions of other variables. Robust statistics, in parentheses, are clustered at the lawsuit filing year. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

Dep Var =	***Prob (DECW=1)***					***NECW***				
Determinants =	**Acc. Irregular.**	**Neg. Mkt Events**	**Whistle-blower**	**Employee Avail.**	**Overall**	**Acc. Irregular.**	**Neg. Mkt Events**	**Whistle-blower**	**Employee Avail.**	**Overall**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Restatement	-0.230**					-0.170**				
	(-1.981)					(-2.362)				
LateFiling	-0.266***					-0.173**				
	(-2.576)					(-2.471)				
ICW	0.173					0.096				
	(1.571)					(1.093)				
AuditorTurnover	-0.202					-0.217*				
	(-1.170)					(-1.807)				
AcctEvent					-0.156***					-0.140**
					(-2.648)					(-2.579)
ExecTurnover	-0.185***				-0.180***	-0.156***				-0.151***
	(-2.777)				(-2.777)	(-3.282)				(-3.155)
AbTrade	-0.874***				-0.840***	-0.496***				-0.478***
	(-3.134)				(-2.931)	(-4.111)				(-3.717)
NegRecom		0.011					0.003			
		(0.113)					(0.048)			
NegCRA		0.280**					0.210*			
		(2.169)					(1.912)			
ABSI		0.124					0.098			
		(1.174)					(1.571)			

NegEvent					0.119*					0.083*
					(1.695)					(2.068)
Whistleblower			0.224		0.218			0.220		0.211
			(1.258)		(1.241)			(1.666)		(1.656)
LaborIntense				0.175*	0.164				0.118*	0.107
				(1.694)	(1.557)				(1.826)	(1.618)
%EmpChg				0.283**	0.266**				0.216***	0.201**
				(2.334)	(2.240)				(2.967)	(2.833)
Ln(AT)	-0.030	-0.028	-0.023	-0.009	-0.019	-0.004	-0.002	0.001	0.012	0.002
	(-1.512)	(-1.392)	(-1.190)	(-0.480)	(-1.095)	(-0.301)	(-0.142)	(0.097)	(0.898)	(0.177)
Leverage	0.331**	0.256	0.304**	0.315**	0.357**	0.251**	0.199*	0.240**	0.246**	0.275**
	(2.196)	(1.589)	(1.981)	(1.971)	(2.290)	(2.359)	(1.740)	(2.198)	(2.180)	(2.566)
MTB	0.000	0.002	0.001	0.000	-0.001	-0.000	0.001	0.001	-0.000	-0.001
	(0.136)	(0.465)	(0.419)	(0.032)	(-0.209)	(-0.079)	(0.382)	(0.320)	(-0.111)	(-0.489)
ROA	-0.143	-0.119	-0.121	-0.083	-0.093	-0.020	-0.006	-0.008	0.024	0.021
	(-1.579)	(-1.311)	(-1.408)	(-0.831)	(-0.951)	(-0.360)	(-0.104)	(-0.136)	(0.340)	(0.322)
InstOwn	0.151*	0.189**	0.197**	0.194**	0.162*	0.152**	0.189***	0.194***	0.190***	0.160**
	(1.733)	(2.054)	(2.208)	(2.176)	(1.778)	(2.534)	(2.891)	(3.027)	(2.962)	(2.521)
CAR	-0.064	-0.098	-0.162	-0.127	-0.135	-0.074	-0.109	-0.169	-0.127	-0.135
	(-0.366)	(-0.550)	(-0.919)	(-0.740)	(-0.826)	(-0.592)	(-0.835)	(-1.311)	(-1.026)	(-1.128)
PIL	0.029	0.005	0.016	0.028	0.034	0.036*	0.018	0.026	0.035	0.041*
	(0.960)	(0.170)	(0.554)	(0.955)	(1.193)	(1.759)	(0.771)	(1.234)	(1.701)	(2.025)
ClassLength	0.168***	0.102***	0.089**	0.092***	0.147***	0.121***	0.065***	0.053**	0.057**	0.101***
	(4.253)	(2.806)	(2.564)	(2.683)	(3.888)	(4.439)	(2.892)	(2.497)	(2.700)	(3.972)
FScore	0.030	0.027	0.016	-0.009	-0.002	0.035	0.030	0.020	0.004	0.012
	(0.569)	(0.533)	(0.324)	(-0.168)	(-0.040)	(1.140)	(0.899)	(0.651)	(0.112)	(0.393)
#Cases	1,447	1,447	1,447	1,447	1,447	1,447	1,447	1,447	1,447	1,447
Filing Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.098	0.088	0.086	0.090	0.100	0.126	0.112	0.112	0.115	0.130

Table 4
Accounting Allegations and ECWs Job Positions

This table presents the association between litigation allegations and ECWs' job positions. Panel A presents the sample distribution for litigation allegations related to GAAP violations and revenue misstatements, along with ECWs in accounting and sales departments. Panel B reports the multinomial logistic regression results for the likelihood of involving ECWs from accounting (sales) department when allegations involve GAAP violations (revenue misstatements). The dependent variable *Accounting* (*Sales*) is set to one if job titles relate to the accounting department, the internal audit function, or the finance department (sales department), and zero otherwise. *GAAP* (*Revenue*) is a dummy variable that equals one for cases when the allegations involve GAAP violations (revenue-related misstatements). See Appendix B for definitions of other variables. Robust statistics, in parentheses, are clustered at the lawsuit filing year. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

Panel A: Distribution of Misstatement Allegations and ECWs Job Positions

	# Cases	%
Allegations:		
Accounting (GAAP Violations)	**460**	**32%**
– Revenue-Related Misstatements	201	14%
Non-Accounting	**987**	**68%**
Total	**1,447**	**100%**
CW Position in:		
Accounting	**151**	**23%**
Sales	**199**	**31%**
– Both Accounting and Sales	52	8%
Non-Accounting/non-sales	**350**	**54%**
Total	**648**	**100%**

Table 4, Continued

Panel B: Multinomial Logistic Regressions

CW Positions:	***Accounting***	***Non-Accounting***	***Sales***	***Non-Sales***
	(1)	(2)	(3)	(4)
GAAP	**1.378*** **	**0.336** **		
	(0.000)	**(0.030)**		
Revenue			**1.025*** **	**0.456** **
			(0.000)	**(0.025)**
AcctEvent	-0.237	-0.496***	-0.567**	-0.264*
	(0.344)	(0.002)	(0.014)	(0.099)
AbTrade	-2.015**	-1.115*	-0.617	-1.629***
	(0.033)	(0.055)	(0.449)	(0.006)
ExecTurnover	-0.153	-0.360**	-0.596***	-0.214
	(0.510)	(0.013)	(0.005)	(0.149)
NegEvent	0.256	0.173	0.243	0.186
	(0.238)	(0.182)	(0.178)	(0.167)
LaborIntense	0.446	0.191	0.049	0.344*
	(0.108)	(0.282)	(0.839)	(0.060)
%EmpChg	-0.008	0.558***	0.746***	0.354*
	(0.980)	(0.002)	(0.004)	(0.064)
Ln(AT)	-0.001	-0.035	-0.036	-0.014
	(0.992)	(0.374)	(0.526)	(0.737)
Leverage	1.006**	0.456*	1.141***	0.309
	(0.027)	(0.083)	(0.002)	(0.262)
MTB	-0.009	-0.000	0.001	-0.003
	(0.565)	(0.992)	(0.889)	(0.689)
ROA	-0.398	-0.075	0.084	-0.272
	(0.321)	(0.705)	(0.781)	(0.189)
InstOwn	0.424	0.250	0.453*	0.197
	(0.135)	(0.139)	(0.061)	(0.260)
CAR	-0.304	-0.110	0.125	-0.291
	(0.621)	(0.762)	(0.811)	(0.439)
PIL	-0.014	0.077	0.044	0.060
	(0.872)	(0.176)	(0.607)	(0.299)
ClassLength	0.473***	0.201***	0.233**	0.250***
	(0.001)	(0.006)	(0.029)	(0.001)
FScore	0.226	-0.075	-0.033	-0.014
	(0.175)	(0.444)	(0.816)	(0.888)
#Cases	1,447		1,447	
Pseudo R^2	0.152		0.129	
Test: GAAP (1) = (2)	***χ^2= 19.20******			
	(0.000)			
Test: Revenue (3) = (4)			***χ^2= 4.95****	
			(0.026)	

Table 5
ECW Involvement and Litigation Settlement and Duration

This table presents the regression estimates for the association between ECW involvement and the settlement likelihood and litigation duration. Columns 1-4 and 5-8 report the results of the main analysis and robustness test using entropy balancing method, respectively. *Settle* is a dummy variable set to one if a lawsuit is settled, and zero if dismissed. *Duration* is the natural logarithm of the length between the misstatement period ending date and the first date on which a dismissal/settlement decision is made. See Appendix B for definitions of other variables. Robust statistics, in parentheses, are clustered at the lawsuit filing year. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

	Main Analysis				**Robustness Test - Entropy Balancing Method**			
Dep Var =	***Settle***		***Duration***		***Settle***		***Duration***	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DECW	**0.312*** **		**0.322*** **		**0.368*** **		**0.256*** **	
	(4.573)		**(11.930)**		**(4.834)**		**(9.353)**	
NECW		**0.185*** **		**0.162*** **		**0.218*** **		**0.130*** **
		(4.842)		**(9.059)**		**(5.224)**		**(8.115)**
Settle			0.733***	0.731***			0.635***	0.631***
			(18.729)	(18.306)			(15.362)	(14.900)
AcctEvent	0.148**	0.159***	-0.079	-0.073	0.099	0.114*	-0.047	-0.041
	(2.460)	(2.658)	(-1.684)	(-1.518)	(1.431)	(1.658)	(-1.133)	(-0.966)
AbTrade	0.050	0.050	0.214*	0.201	0.075	0.076	0.242**	0.243**
	(0.210)	(0.204)	(1.939)	(1.703)	(0.267)	(0.266)	(2.123)	(2.091)
ExecTurnover	-0.080	-0.072	-0.002	0.002	-0.155*	-0.144*	-0.028	-0.023
	(-1.069)	(-1.005)	(-0.042)	(0.037)	(-1.739)	(-1.699)	(-0.725)	(-0.601)
NegEvent	0.024	0.024	0.006	0.006	0.049	0.050	0.003	0.002
	(0.313)	(0.307)	(0.104)	(0.109)	(0.616)	(0.632)	(0.048)	(0.045)
Whistleblower	0.503***	0.495***	0.071	0.063	0.481***	0.471***	0.105*	0.096
	(4.681)	(4.532)	(1.103)	(0.983)	(4.336)	(4.165)	(1.825)	(1.688)
LaborIntense	0.026	0.024	0.047	0.048	-0.035	-0.038	0.057	0.056
	(0.234)	(0.218)	(0.834)	(0.870)	(-0.281)	(-0.308)	(1.430)	(1.402)
%EmpChg	0.116	0.108	0.001**	0.002***	0.027	0.019	0.001	0.001*
	(1.367)	(1.354)	(2.501)	(3.276)	(0.420)	(0.290)	(1.256)	(1.802)
Ln(AT)	-0.032*	-0.036*	0.060***	0.057***	-0.050**	-0.054**	0.056***	0.053***

	(-1.693)	(-1.839)	(4.813)	(4.674)	(-1.961)	(-2.101)	(5.375)	(5.216)
MTB	-0.000	0.000	0.001	0.001	0.002	0.002	0.001	0.001
	(-0.020)	(0.029)	(0.406)	(0.452)	(0.371)	(0.459)	(0.341)	(0.449)
Leverage	0.004	-0.009	-0.062	-0.068	-0.009	-0.022	-0.074	-0.077
	(0.026)	(-0.062)	(-1.087)	(-1.207)	(-0.055)	(-0.125)	(-1.047)	(-1.079)
ROA	0.025	0.012	-0.011	-0.022	0.175	0.154	-0.150**	-0.158**
	(0.217)	(0.108)	(-0.163)	(-0.324)	(1.297)	(1.119)	(-2.320)	(-2.668)
InstOwn	-0.059	-0.070	0.067*	0.060	-0.094	-0.106	0.037	0.027
	(-0.754)	(-0.888)	(1.938)	(1.605)	(-1.086)	(-1.252)	(1.089)	(0.760)
CAR	-0.616***	-0.611***	-0.377***	-0.373***	-0.840***	-0.836***	-0.313***	-0.308***
	(-3.418)	(-3.315)	(-3.783)	(-3.761)	(-3.399)	(-3.280)	(-3.593)	(-3.498)
PIL	0.077**	0.073*	0.022	0.019	0.038	0.035	0.016	0.015
	(2.048)	(1.943)	(1.302)	(1.193)	(1.542)	(1.389)	(1.208)	(1.128)
ClassLength	-0.001	-0.003	0.036	0.036	0.047	0.044	0.057**	0.055**
	(-0.013)	(-0.062)	(1.608)	(1.606)	(1.021)	(0.956)	(2.728)	(2.635)
FScore	0.245***	0.244***	-0.006	-0.007	0.265***	0.265***	-0.012	-0.013
	(4.110)	(4.053)	(-0.227)	(-0.285)	(3.554)	(3.523)	(-0.542)	(-0.595)
#Cases	1,441	1,441	1,441	1,441	1,441	1,441	1,441	1,441
Filing Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Circuit FE	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo/Adj R^2	0.121	0.123	0.362	0.358	0.158	0.162	0.355	0.353

Table 6
Information Content of ECW Testimonies and Litigation Settlement and Duration

This table presents the effect of the information content of ECWs' statements on the settlement likelihood and litigation duration. Panel A shows the sample distribution by the information types of ECW testimonies. *Scienter* is a dummy variable that equals one if ECWs' testimony contains information about defendants' intent to misstate, and zero otherwise. *Particularity* is a dummy variable that equals one if ECWs' testimony contains information about the particularities of the misstatement, and zero otherwise. Panel B presents regression results using *Settle* and *Duration* as the dependent variable, respectively. See Appendix B for definitions of the variables. Robust statistics, in parentheses, are clustered at the lawsuit filing year. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

Panel A: Sample Distribution of Information Content of ECW Testimonies

	Particularity				
	No		**Yes**		**Total**
Scienter					
No	80	[12.3%]	169	[26.1%]	249 [38.4%]
Yes	90	[13.9%]	309	[47.7%]	399 [61.6%]
Total	170	[26.2%]	478	[73.8%]	648

Table 6, Continued

Panel B: The Effect of ECW Testimonies on Litigation Settlement and Duration

Dep Var =	***Settle***			***Duration***		
	(1)	(2)	(3)	(4)	(5)	(6)
DECW_Scienter	**0.207****			**0.281*****		
	(2.280)			**(8.760)**		
DECW_Particular		**0.283*****			**0.303*****	
		(4.055)			**(9.990)**	
DECW_ScienterOnly			**0.257****			**0.202*****
			(2.118)			**(3.969)**
DECW_ParticularOnly			**0.366*****			**0.246*****
			(2.583)			**(6.608)**
DECW_Both			**0.283*****			**0.367*****
			(2.961)			**(9.057)**
Settle				0.751***	0.741***	0.738***
				(17.596)	(18.096)	(17.814)
AcctEvent	0.143**	0.132**	0.144**	-0.080	-0.094*	-0.083
	(2.405)	(2.314)	(2.405)	(-1.670)	(-1.968)	(-1.715)
AbTrade	0.003	0.025	0.024	0.177	0.188*	0.199*
	(0.010)	(0.101)	(0.100)	(1.493)	(1.726)	(1.792)
ExecTurnover	-0.093	-0.090	-0.084	-0.013	-0.012	-0.009
	(-1.235)	(-1.214)	(-1.109)	(-0.258)	(-0.242)	(-0.183)
NegEvent	0.029	0.029	0.024	0.005	0.009	0.004
	(0.365)	(0.365)	(0.306)	(0.101)	(0.184)	(0.086)
Whistleblower	0.512***	0.488***	0.488***	0.076	0.052	0.055
	(4.414)	(4.339)	(4.427)	(1.201)	(0.751)	(0.830)
LaborIntense	0.044	0.034	0.028	0.064	0.054	0.055
	(0.394)	(0.311)	(0.259)	(1.146)	(1.001)	(1.003)
%EmpChg	0.120	0.114	0.117	0.002***	0.002**	0.002***
	(1.455)	(1.407)	(1.429)	(4.000)	(2.725)	(3.019)
Ln(AT)	-0.034*	-0.031	-0.032*	0.059***	0.062***	0.061***

	(-1.823)	(-1.605)	(-1.645)	(4.829)	(4.809)	(4.829)
MTB	-0.000	-0.000	-0.000	0.001	0.001	0.001
	(-0.055)	(-0.025)	(-0.015)	(0.328)	(0.376)	(0.360)
Leverage	0.020	0.002	0.004	-0.054	-0.063	-0.067
	(0.145)	(0.018)	(0.030)	(-0.938)	(-1.053)	(-1.131)
ROA	0.015	0.022	0.024	-0.020	-0.012	-0.013
	(0.125)	(0.192)	(0.205)	(-0.311)	(-0.185)	(-0.194)
InstOwn	-0.037	-0.065	-0.068	0.091**	0.061*	0.069*
	(-0.502)	(-0.842)	(-0.901)	(2.520)	(1.742)	(1.963)
CAR	-0.605***	-0.639***	-0.630***	-0.358***	-0.400***	-0.379***
	(-3.371)	(-3.635)	(-3.414)	(-3.379)	(-4.081)	(-3.625)
PIL	0.075**	0.078**	0.075**	0.019	0.022	0.020
	(1.979)	(2.114)	(2.020)	(1.224)	(1.299)	(1.191)
ClassLength	0.006	0.005	0.004	0.040*	0.042*	0.038
	(0.120)	(0.115)	(0.079)	(1.856)	(1.865)	(1.716)
FScore	0.247***	0.245***	0.248***	-0.004	-0.006	-0.005
	(4.351)	(4.094)	(4.118)	(-0.156)	(-0.233)	(-0.185)
#Cases	1,441	1,441	1,441	1,441	1,441	1,441
Filing Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Circuit FE	YES	YES	YES	YES	YES	YES
Pseudo/Adj R^2	0.115	0.118	0.120	0.349	0.354	0.359

Table 7
Employee Satisfaction and ECW Involvement

This table presents the regression estimates for the association between employee satisfaction and ECW involvement in securities class actions against financial disclosure fraud. The dependent variables of columns 1-3 and 4-6 are the likelihood and number of ECWs involved in a lawsuit, respectively. Employee satisfaction is measured by *OverallRating*, *RecommendStatus* and *AveRating*. See Appendix B for variable definitions. Robust statistics, in parentheses, are clustered at the lawsuit filing year level. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

Dep Var =	***Prob (DECW=1)***			***NECW***		
Ratings =	***Overall Rating***	***Recommend Status***	***Ave Rating***	***Overall Rating***	***Recommend Status***	***Ave Rating***
	(1)	(2)	(3)	(4)	(5)	(6)
Ratings	**-0.186*****	**-0.271*****	**-0.255*****	**-0.131*****	**-0.196*****	**-0.162*****
	(-3.078)	**(-2.715)**	**(-4.842)**	**(-3.910)**	**(-4.635)**	**(-5.524)**
Ln(AT)	-0.002	0.001	-0.000	0.000	0.002	0.000
	(-0.050)	(0.013)	(-0.012)	(0.012)	(0.103)	(0.013)
Leverage	0.122	0.105	0.103	0.100	0.086	0.089
	(0.451)	(0.379)	(0.382)	(0.667)	(0.564)	(0.612)
MTB	0.002	0.002	0.002	0.002	0.002	0.001
	(0.654)	(0.662)	(0.650)	(0.691)	(0.715)	(0.646)
ROA	0.369	0.356	0.353	0.250	0.240	0.238
	(1.327)	(1.277)	(1.280)	(1.375)	(1.339)	(1.311)
InstOwn	0.047	0.048	0.053	0.085	0.085	0.088
	(0.275)	(0.276)	(0.302)	(0.771)	(0.768)	(0.792)
CAR	0.021	0.026	0.011	-0.081	-0.077	-0.088
	(0.059)	(0.073)	(0.032)	(-0.318)	(-0.302)	(-0.347)
PIL	0.165**	0.160**	0.163**	0.081**	0.078*	0.080*
	(2.159)	(2.081)	(2.150)	(2.149)	(2.026)	(2.105)
ClassLength	0.136***	0.142***	0.135***	0.099**	0.103**	0.099**
	(3.128)	(3.262)	(3.055)	(2.639)	(2.714)	(2.651)
FScore	0.043	0.051	0.035	0.042	0.047	0.038
	(0.451)	(0.534)	(0.366)	(0.782)	(0.857)	(0.696)
Constant	-0.844	-1.381	-0.718	0.539	0.160	0.589
	(-0.839)	(-1.460)	(-0.702)	(0.850)	(0.275)	(0.947)
#Cases	635	635	635	635	635	635
Filing Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Pseudo/Adj. R^2	0.086	0.086	0.088	0.092	0.093	0.093

Table 8
Employee Satisfaction and Information Content of ECW Testimonies

This table presents the multinomial logit regression estimates for the association between employee satisfaction and information content provided by ECWs in securities class actions. The dependent variable *DECW_Either* is an indicator set to one if ECWs provide either scienter or particularity information but not both. *DECW_Both* is an indicator set to one if ECWs provide both scienter and particularity information. Employee satisfaction is measured by *OverallRating*, *RecommendStatus* and *AveRating*. See Appendix B for variable definitions. Robust statistics, in parentheses, are clustered at the lawsuit filing year level. ***, **, * represent the significance at 1%, 5% and 10% two-tailed level, respectively.

Dep Var =	***DECW_ Either***	***DECW_ Both***	***DECW_ Either***	***DECW_ Both***	***DECW_ Either***	***DECW_ Both***
Ratings =	***OverallRating***		***RecommendStatus***		***AveRating***	
	(1)	(2)	(3)	(4)	(5)	(6)
Ratings	-0.052	**-0.346****	-0.067	**-0.621*****	-0.174	**-0.482*****
	(-0.374)	**(-2.182)**	(-0.313)	**(-2.965)**	(-0.986)	**(-3.098)**
Ln(AT)	0.021	-0.113*	0.021	-0.102*	0.028	-0.110*
	(0.235)	(-1.888)	(0.223)	(-1.747)	(0.305)	(-1.876)
Leverage	0.128	0.471	0.129	0.421	0.099	0.431
	(0.244)	(0.974)	(0.243)	(0.848)	(0.187)	(0.880)
MTB	-0.001	0.001	-0.001	0.001	-0.001	0.001
	(-0.185)	(0.234)	(-0.181)	(0.274)	(-0.168)	(0.214)
ROA	0.476	0.571	0.465	0.527	0.444	0.518
	(0.670)	(1.051)	(0.661)	(0.991)	(0.608)	(0.948)
InstOwn	0.552	-0.013	0.551	-0.021	0.551	-0.001
	(1.537)	(-0.049)	(1.528)	(-0.076)	(1.506)	(-0.003)
CAR	0.276	0.587	0.283	0.620	0.287	0.592
	(0.367)	(0.815)	(0.383)	(0.858)	(0.381)	(0.819)
PIL	0.311**	0.312**	0.311**	0.302*	0.304**	0.307**
	(2.053)	(2.017)	(2.069)	(1.903)	(2.022)	(1.975)
ClassLength	0.143	0.304***	0.146	0.315***	0.138	0.302***
	(1.414)	(3.668)	(1.438)	(3.825)	(1.384)	(3.706)
FScore	-0.082	0.173	-0.080	0.191	-0.094	0.160
	(-0.471)	(1.195)	(-0.463)	(1.339)	(-0.540)	(1.108)
#Cases	635	635	635	635	635	635
Filing Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.124	0.124	0.126	0.126	0.125	0.125
Test: Ratings (1) = (2)	***χ^2= 2.77****					
	(0.096)					
Test: Ratings (3) = (4)			***χ^2= 3.88****			
			(0.049)			
Test: Ratings (5) = (6)					*χ^2= 2.18*	
					(0.140)	