The Monetary Benefit of Cooperation in Regulatory Enforcement Actions for Financial Misrepresentation

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Abstract

We examine the monetary benefits of firm cooperation with regulators for 1,059 enforcement actions initiated by the Securities and Exchange Commission (SEC) and Department of Justice (DOJ) for financial misrepresentation from 1978-2011. We estimate that firm cooperation results in a 12% increase in the probability of regulators bringing charges against firms. However, using a Heckman full maximum likelihood estimator, we find that being credited for cooperation by regulators reduces the monetary penalties firms pay by 35% (conversely, non-cooperation increases monetary penalties by 53%). Assuming an average penalty, this translates to a $6 million benefit from cooperation. When cooperation credit is coupled with conducting an independent investigation and making the results available to regulators, monetary penalties are reduced by 47%, or $8.2 million on average. These estimates are robust to controlling for factors considered by the SEC and DOJ when determining whether or not to bring charges and determining penalties. Alternative estimators provide similar estimates of the monetary benefits of cooperation.

JEL classification: G38; K22; K42; M41; M48

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1. Introduction

When firms or their employees are caught violating securities laws, a potential response is for firms to cooperate with regulators. The U.S. Securities and Exchange Commission (SEC) and the U.S. Department of Justice (DOJ) receive tangible benefits from firm cooperation, including the prompt discovery of financial misconduct, expedient investigations, and a cost-effective means of obtaining critical information about law violations. In fact, economic theory suggests that regulators cannot optimally enforce misconduct without some element of corporate self-reporting and cooperation.[1] It is therefore not surprising that regulators encourage this behavior by expressing a willingness to reward cooperation. In a May 2010 speech, U.S. Assistant Attorney General Lanny Breuer promised that companies cooperating fully with DOJ staff will receive "meaningful credit" for these actions.[2] Both the DOJ and SEC recently renewed their commitment to reward cooperative behavior by amending the United States Attorneys' Manual to include cooperation and initiating a formal program aimed at reducing penalties for cooperators, respectively.[3] However, little is known about the actual monetary benefits of cooperation, if any, that accrue to firms disciplined by the SEC and DOJ for law violations. We fill this void by examining whether cooperation with regulatory agencies systematically reduces the monetary penalties assessed against firms named in enforcement actions for financial misrepresentation.

[1] See Kaplow and Shavell (1994) and Arlen (2011).
[2] Breuer, Lanny, "Prepared Remarks to Compliance Week 2010 – 5th Annual Conference for Corporate Financial, Legal, Risk, Audit & Compliance Officers," May 26, 2010, http://www.justice.gov/criminal/pr/speeches-testimony/2010/05-26-10aag-compliance-week-speech.pdf.
[3] See U.S. Department of Justice (1997, 2008) and U.S. Securities and Exchange Commission (SEC) (2001, 2006, 2010a).

Throughout our study, an "enforcement action" encompasses the series of events and public announcements related to misrepresented financial statements that result in regulator-initiated disciplinary actions. Each enforcement action includes at least one securities law violation that regulators identify, investigate, and then penalize according to the nature and severity of the violation. On average, the enforcement process lasts 4.6 years, and firms have many opportunities to cooperate with regulators during this time period. Firm cooperation can include responding promptly and completely to regulators' information requests, voluntarily disclosing pertinent information not directly requested by regulators, encouraging employees to cooperate with regulators, and disclosing the results of company-initiated internal investigations. Statements such as "the firm was given credit for" or the "settlement takes into consideration the substantial cooperation provided" are typical in enforcement documents, suggesting that the SEC and DOJ consider firm cooperation when determining monetary penalties. However, the exact type or amount of consideration given is not revealed. According to Arlen (2011), lack of transparency as to the quantifiable benefits of cooperation credit may undermine the willingness of firms to cooperate in the enforcement process.

Prior research on the monetary benefits of cooperation that accrue to firms disciplined by the SEC and DOJ is quite limited. The most compelling evidence comes from Files (2012) who examines the conditions under which the SEC exercises enforcement leniency following a restatement. Using a sample of 127 restatement firms that are named in SEC enforcement actions, she finds that a publicly announced company-initiated internal investigation (her proxy for cooperation) is negatively related to monetary penalties subsequently levied by the SEC. Although Files (2012) informs managers about the potential risks and rewards of a company-initiated investigation (conditional on both a firm reporting a restatement and being named in an

enforcement action), she cannot speak to the benefits of other cooperative actions taken by a firm or the impact of these actions on the enforcement of non-restatement-related law violations.

Our paper contributes to the literature by taking an in-depth look at the monetary benefits firms receive when they have been cited for cooperation by regulators in financial misrepresentation enforcement actions. Our analysis differs from Files (2012) in that (1) our sample is not conditional on the firm filing a restatement, which allows us to examine a more diversified sample of enforcement cases; (2) we explore the benefits of both company-initiated investigations and other forms of cooperative actions deemed valuable to regulators; and (3) we examine the characteristics of firms cited for cooperation by the SEC or DOJ. An analysis of this nature is important because the average firm sanctioned by the SEC or DOJ for financial misrepresentation pays nearly $17.3 million in fines and penalties to regulators. Therefore, determining if, and to what extent, cooperation with regulators reduces these monetary penalties is of interest to managers as they evaluate the possible consequences of a law violation. This analysis also has important implications for regulators and their ability to optimally enforce corporate crimes. In particular, evidence that the SEC and DOJ systematically offer leniency to firms that cooperate should encourage more firms to engage in these behaviors, thus enhancing the deterrence and enforcement of corporate crimes.

We examine the association between monetary penalties paid by firms and regulator-cited cooperation using a sample of 1,059 enforcement actions initiated by the SEC and DOJ for financial misrepresentation from 1978 through 2011. We identify a firm as receiving cooperation credit if the enforcement documents explicitly indicate that the firm's cooperation with regulators was considered when determining the firm's monetary penalty. This classification process is objective and verifiable because we depend on assessments made by the

SEC and DOJ, not the researcher, to identify firm cooperation. In all of our analyses, we control for the many criteria regulators consider when determining whether to bring charges against a firm and determining the extent of firm penalties, such as the nature and extent of the violation, alternative disciplinary methods, firm characteristics, and the nature of the regulatory environment. We also control for the potential effect of sample selection bias on our results by using a Heckman selection full maximum likelihood model.

Our analyses show that there are significant monetary benefits for firms that cooperate with regulators in the enforcement process. Being cited for cooperation by regulators in a financial misrepresentation enforcement action reduces the firm's monetary penalty by 34.7%, or conversely, not cooperating increases penalties by 53.1%. Assuming an average penalty, this translates into a $6.0 million benefit for cooperation. We also find that monetary penalties are reduced by 19.1%, or $3.3 million on average, when firms conduct an independent internal investigation and make the results unconditionally available to regulators. This suggests that cooperation with regulators is beneficial above and beyond company-initiated independent investigations and, on average, result in larger penalty reductions. Consistent with prior work (Files, 2012), we also find that cooperation with regulators increases the predicted probability that the firm is named as a respondent in an enforcement action by 11.8% (from 75.7% to 87.5%). Collectively, our findings provide clear evidence that regulators systematically offer leniency to cooperating firms when determining monetary penalties and the monetary benefits of cooperation appear to outweigh the increased probability of the firm being charged.

In supplemental cross-sectional tests, we find several factors that explain the likelihood of firm cooperation in the enforcement process. Cooperation is more likely in firms: (1) with lower relative market valuations as measured by the market-to-book ratio; (2) that exist in the

same form as when the violation occurred; (3) that retained Big 8 (now Big 4) auditors; (4) with smaller boards of directors; (5) where the financial misrepresentation centers on foreign bribery charges, is associated with inadequate internal controls, or is motivated by internal or external sales or earnings expectations; (6) where the misconduct does not involve fraud; (7) that respond quickly to the misconduct once they become aware of it; and (8) that are penalized in the period subsequent to the enactment of the Securities Enforcement Remedies and Penny Stock Reform Act on October 15, 1990 up until the SEC's announcement of the cooperation initiative in October 2001. These findings offer important insights into the characteristics of firms that have cooperated with the SEC and DOJ in the enforcement process.

The paper proceeds as follows. In Section 2, we review related research and describe the problems that arise in previous attempts to examine whether firms benefit from cooperation with regulators. Section 3 describes our data and the protracted process of most regulatory enforcement actions for financial misrepresentation. In Section 4, we present the results of the selection equation of the Heckman selection model that estimates the probability of a firm being named as a respondent in the enforcement action. Section 5 presents the results of the outcome equation of the Heckman selection model that examines the monetary benefits of cooperation with regulators in enforcement actions. Section 6 explores the cross-sectional determinants of whether or not a firm received credit for cooperation with regulators in the enforcement process. Section 7 provides concluding remarks.

2. Previous research

The majority of research on cooperation uses a game-theoretic approach based in part on the classic iterated zero-sum Prisoner's Dilemma game.[4] Licht (1999) extends the game-theory approach to analyze and call for cooperation among international securities regulators. Much of

[4] See Axelrod (1984, 1997), Axelrod and Dion (1988), and Axelrod and Hamilton (1981).

the research that follows attempts to explain cooperation between regulators of jurisdictional authority and does not address cooperation between the regulator and the respondent.[5] While the nationalization and globalization of financial markets has increased the need for cooperation between state, federal, and international securities regulators, securing cooperation with the target of a regulatory enforcement action is also important to ensuring efficient and cost-effective regulatory environments at each jurisdictional-level.

A corporation is considered a "legal person" under the law, which enables it to sue, be sued, and commit law violations. Standard legal and economic theory maintains that corporate crime can be effectively deterred if the corporation is held strictly liable for its crimes, with larger fines leading to less crime.[6] However, more recent research suggests that the optimal enforcement of corporate crimes differs from that of individual crimes primarily because the firm can intervene both ex ante and ex post to enhance regulators' enforcement efforts. Firms can prevent crimes ex ante by monitoring their employees' behavior, while ex post investigation and cooperation lead to the prompt discovery of misconduct and reduce the cost of regulatory prosecution (SEC, 2001; Arlen, 2011). The reduction in enforcement costs is largely possible because firms are better prepared than the government to detect law violations, identify responsible parties, and obtain evidence of the violations due to their unique knowledge of business operations (Arlen and Kraakman, 1997). Cooperation by firms also increases the likelihood that future corporate misconduct will be detected, which should reduce incentives for individuals to commit misconduct in the first place (Arlen, 2011). Therefore, this view of optimal corporate liability highlights that the most cost-effective enforcement regime includes some element of corporate monitoring, self-reporting, and cooperation.

[5] See Jones (2004) for an example of cooperation between federal and state regulators and Black (2011) for an example of cooperation between international regulators.
[6] See, e.g., Becker (1968), Block (1991), Arlen (1994), Lott (1999), and Parker and Atkins (1999).

To induce cooperation, however, regulators must ensure that firms are better off when they cooperate than when they do not. Over the past two decades, the SEC and DOJ have both publicly announced that they will reward cooperation following law violations (see, e.g., U.S. Department of Justice, 1997; U.S. Securities and Exchange Commission, 2001, 2006a, 2010a). The DOJ suggests that "the corporation's timely and voluntary disclosure of wrongdoing and its cooperation with the government's investigation" may result in no criminal charges, deferred- or non-prosecution agreements, or assessed fines below sentencing guidelines (U.S. Department of Justice, 1997; Breuer, 2010). The SEC (2006a) states that it considers "the degree to which a corporation has self-reported an offense or otherwise cooperated with the investigation, and its remediation of the offense" when determining penalties.[7] More recently, the SEC (2010a) announced a new cooperation initiative which allows its staff more leeway in rewarding firms and individuals for cooperation.

Both the SEC and DOJ have historically disclosed when cooperation credit influenced the determination of regulatory penalties for law violations. For example, the regulatory proceeding against Sunrise Senior Living, Inc. and two former corporate officers states: "The terms of the proposed settlement with Sunrise reflect credit given to Sunrise for its substantial assistance in the investigation" (SEC, 2010b). The settlement did not include monetary penalties for the firm but did include monetary penalties for the former corporate officers. Cooperation is also documented in an enforcement action against Thor Industries, Inc. and its former vice president of finance: "The settlement with Thor takes into account the company's self-reporting and

[7] The SEC's 2001 Statement on the Relationship of Cooperation to Agency Enforcement Decisions (Seaboard Report) outlines the specific criteria considered when determining whether to "credit" self-policing, self-reporting, remediation, and cooperation. For example, "did the company ask its employees to cooperate with our staff and make all reasonable efforts to secure such cooperation," and "did the company provide our staff with sufficient information for it to evaluate the company's measures to correct the situation and ensure that the conduct does not reoccur?"

significant cooperation in the SEC's investigation" (SEC, 2011a). In this case, the settlement included a $1 million penalty for the firm and disgorgement of nearly $400,000 by the former executive. Although these regulatory proceedings indicate that cooperation influenced the SEC's determination of monetary penalties, lack of transparency does not allow the public to understand how large the monetary penalties would have been without cooperation. Because the quantifiable benefits (if any) of cooperation are unclear, industry professionals have expressed skepticism about the extent of cooperation that firms should offer to regulatory staff following law violations (see, e.g. Aguilar, 2010; Weissmann and Smith, 2010).

Empirical research examining the monetary benefits of firm cooperation with the SEC and DOJ following law violations is limited. Files (2012) provides the most extensive analysis to date; however, she limits her examination to the association between company-initiated independent investigations (her proxy for cooperation) and monetary penalties for enforcement actions involving restatements. Using a sample of 127 restatement firms that are sanctioned by regulators, she finds that independent investigations reduce the SEC monetary penalties assessed against a firm by $37.4 million, on average.[8] Although this study provides initial evidence that firms can reduce regulatory penalties if they conduct company-initiated investigations, it analyzes only restatement firms and fails to consider cooperation from the standpoint of regulators.

Two other studies control for cooperation (defined as SEC or DOJ disclosure that the firm cooperated during the enforcement process) in regression models predicting the magnitude of regulatory monetary penalties. Karpoff, Lee, and Martin (KLM) (2012b) find no association between cooperation and total monetary penalties for all respondents, while Correia (2009) finds

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[8] The 127 restatement-related enforcement actions analyzed in Files (2012) reflect only eight percent of all SEC sanctions issued during her (1997-2005) sample period.

that cooperation reduces total monetary penalties for all respondents in the pre-1999 time period. The inferences drawn from these studies, however, are limited due to the authors' research design choices. For example, self-selection issues arise since firms choose whether or not to cooperate and prosecutors choose which cases to pursue. Although KLM (2012b) control for these and other issues using a structural equations model, Correia (2009) does not control for self-selection. In addition, Correia (2009) examines total regulatory penalties assessed against *all* respondents (including the firm and its employees and agents) while KLM (2012b) examine total regulatory penalties, civil class action settlements, and non-monetary sanctions against *all* respondents, making it difficult to isolate the monetary benefits of cooperation accruing specifically to the firm. Finally, Correia (2009) limits her sample to firms with political contributions or lobbying expenditures that are accused of financial misrepresentation. Thus, it is unclear from prior research if cooperation reduces monetary penalties imposed by regulators against the firm for the entire universe of financial misrepresentation enforcement actions and how large the penalty reductions may be.

3. Financial misrepresentation

3.1. Enforcement data

Since we are interested in examining the monetary benefits of firm cooperation with regulators following the discovery of a law violation, we base our sample on data from the Federal Securities Regulation (FSR) database described in Karpoff, Koester, Lee, and Martin (2012). This database consists of all 1,099 enforcement actions by the SEC and DOJ from 1978 through 2011 that include violations of the accounting provisions enacted under the 1977 Foreign Corrupt Practices Act (FCPA).[9] All of the enforcement actions include charges of financial misrepresentation under one of three sections of the Securities Exchange Act of 1934 as

[9] The FSR database is available at http://www.fesreg.com.

amended by the FCPA: 15 USC § 78.13(b)(2)(A) and (B) and § 78.13(b)(5) and two rules under the Code of Federal Regulations 17 CFR 240.13b2-1 and 13b2-2. Collectively, these regulations require every issuer of a security under Section 12 of the Exchange Act to (1) make and keep books, records, and accounts which accurately reflect the transactions of the issuer; and (2) devise and maintain a system of internal accounting controls. The regulations also mandate that no person shall knowingly circumvent a system of internal accounting controls; knowingly falsify any book, record, or account required under these regulations; or directly or indirectly make a materially false or misleading statement to an accountant. Regulators are required to investigate and prosecute criminal wrongdoing that is discovered and falls under the FCPA (U.S. Department of Justice, 1997).

As explained in Karpoff et al. (2012), the FSR database provides several benefits relative to alternative data sources used in prior research. Most importantly, the database contains the universe of federal enforcement actions for books and records and internal controls misrepresentation. Other possible screens to identify financial misrepresentation cases include Accounting and Auditing Enforcement Releases (AAERs) (see, e.g., Feroz, Park, and Pastena, 1991; Bonner, Palmrose, and Young, 1998) and private class action lawsuit filings (see e.g., Gande and Lewis, 2009).[10] Such screens suffer four potentially critical flaws: (1) they do not capture all federal enforcement actions for financial misrepresentation; (2) they require the researcher to make subjective judgments as to which observations to exclude from their sample (e.g., duplicate events, events unrelated to misconduct); (3) they exclude all other regulatory

[10] An AAER is a secondary classification of a Securities Act Release, Exchange Act Release, or Litigation Release. The Commission announced the AAER series “to enable interested persons to easily distinguish enforcement releases involving accountants from other Commission releases” (Accounting and Auditing Enforcement Release No. AAER-1, 1982 SEC LEXIS 2565, May 17, 1982). While an AAER identifies enforcement actions involving accountants, it will not identify those cases in which an accountant is not involved in a Commission enforcement action, nor will it identify enforcement actions by the DOJ. Many AAERs also describe enforcement actions that do not involve financial misrepresentation.

releases and announcements (e.g., DOJ criminal proceedings and SEC releases that do not involve accountants) that may contain pertinent information related to the enforcement proceeding; and (4) they exclude announcements related to the enforcement action that occur prior to the filing of a class action lawsuit or the initial regulatory proceeding. Since May 1982 when the SEC began the AAER series, approximately 83% of the enforcement actions in the FSR database have at least one associated AAER. The FSR database, however, supplements the information included in AAERs with details gathered from additional legal filings such as civil complaints filed by the SEC and DOJ, criminal indictments from the DOJ and state Attorney General offices, District court documents, and corporate filings in EDGAR. This information is often overlooked when researchers simply focus on AAERs or securities class action lawsuits.

Table 1 presents a breakdown of the 1,099 enforcement actions for financial misrepresentation included in the FSR database according to the type of security registered with the SEC. The sizable majority (96%) of regulatory enforcement actions involve firms whose shares are registered under Section 12 of the Exchange Act as common equity. Of the 1,059 observations falling into this category, 1,026 are for firms with ordinary shares and 33 are for firms with American Depository Receipts (ADR) representing foreign shares of common equity. Other types of securities subject to enforcement actions include limited partnerships (15), public debt (9), preferred stock (5), Real Estate Investment Trusts (REITs) (4), cooperatives (2), annuities (1), and mutual funds (1). Three additional enforcement actions occur during the registration process of an initial public offering (IPO), and each of these securities was withdrawn prior to issuance. We limit our sample to the 1,059 enforcement actions involving firms with common equity securities to ensure that valuation measures related to common stock are available for our analyses.

3.2. The enforcement process

The timeline in Figure 1 depicts the typical sequence of events surrounding a securities enforcement action for financial misrepresentation.[11] Each enforcement action is a compilation of events and public announcements related to the firm whose financial statements are misrepresented. Regulatory proceedings are the disciplinary actions initiated by regulators, and commonly include a mixture of proceedings that may implicate the firm itself, other affiliated firms, or individuals associated with the firm. The SEC publicly discloses these proceedings in the SEC Docket, by issuing press releases, enforcement releases in the form of Administrative Proceedings or Litigation Releases, or Administrative Law Judge Initial Decisions or Orders. Either the DOJ or relevant U.S. Attorney's Office may also issue press releases concerning civil or criminal actions. Any filings made at U.S. District Courts also become a matter of public record.

As depicted in Table 2, the 1,059 enforcement actions in our sample involve 10,085 unique events (an average of 9.5 events per enforcement action) that take place over a mean (median) period of 90.7 (83.1) months. Table 2 presents the frequency with which each type of event was announced in our sample, the number and percentage of enforcement actions with at least one incident of that event, and the mean and median relative length of time in months from the end of the violation period (the period during which the firm misrepresented its financial statements) to the event date.

An enforcement action typically begins with a conspicuous event or public announcement that draws the attention of regulators. These events, labeled trigger events, are often firm disclosures of potential problems. Common trigger events include the self-disclosure

[11] For more information, see the SEC (1973), Lucas (1997), Cox, Thomas, and Kiku (2003), or KLM (2008a, 2008b).

of a potential malfeasance, instigation of an internal investigation, suspension or termination of an executive, delayed filing of an annual or quarterly report, announcement of an auditor departure, restatement of a previously filed financial statement, and identification of unusual trading patterns. Using information gathered from 876 unique source documents (including regulatory proceedings and firm announcements), we specifically identify the initial trigger event for 82% of our sample (870 of 1,059 enforcement actions). The trigger events occur a mean (median) of 1.6 (2.2) months after the end of the violation period.

In addition to attracting the attention of regulators, trigger events also often precede the filing of earnings restatements and civil class action lawsuits. For example, slightly more than half of our sample firms (560 firms or 53%) announce a pending or actual restatement of previously issued financial statements, and these announcements occur an average of 2.5 months after the violation period end date and almost one month after the initial trigger event. The time lag between the initial trigger event and the restatement announcement likely occurs because (1) restatements are often announced in conjunction with earnings releases (which are announced on a pre-determined schedule), and (2) firms often delay disclosure until the impact of the restatement can be quantified and the internal investigation is completed.[12] Private class action lawsuits are filed against 48% of the firms in our sample (509 of 1,059 enforcement actions).

Once a potential law violation has been identified, SEC staff privately request information from the firm and carry out an informal investigation. If the case warrants additional attention, the SEC then initiates a formal investigation during which it can use subpoena power to gather more information from the firm. Twenty-five percent of the sample firms voluntarily announce that they are the target of an informal inquiry, with the remaining 75% electing not to

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[12] Almost 50% of restatements announced during the 1997-2002 time period are bundled with earnings news (Gordon, Henry, Peytcheva, and Sun, 2008; Files, Swanson, and Tse, 2009).

disclose this information to the public. Over half of the sample (54%) announce that a formal regulatory investigation has begun, and these announcements occur a mean (median) of 8.3 (7.0) months after the violation end date or 3.2 (2.6) months after the informal investigation announcement. Once regulators gather enough information to consider filing formal proceedings, it is customary to send the target a "Wells notice" that announces the intent by regulators to file the enforcement action. This notification provides the target one last opportunity to issue a "Wells response" explaining why the regulator should not proceed. The receipt of a Wells notice is announced 158 times in relation to 136 (13%) of the enforcement actions in our sample and occurs approximately two years after the informal inquiry or announcement of a formal investigation.

Formal investigations, which often last for several years, culminate with the SEC either (1) dropping the case and taking no action, or (2) filing administrative or injunctive proceedings against the respondents and possibly referring the case to the DOJ for parallel criminal prosecution. Cases dropped by regulators are not publicly reported and do not appear in the FSR database. The DOJ has the authority to file civil injunctive actions as well as criminal actions and, in a few cases, has exercised that authority in lieu of the SEC. Each of the 1,059 enforcement actions has at least one regulatory proceeding; however, the vast majority (889 or 84%) culminate with multiple regulatory proceedings against the firm and/or other culpable parties. We identify 5,550 total regulatory proceeding events for our sample, or an average of 5.2 releases associated with each enforcement action. These releases are issued over a regulatory period lasting a mean (median) of 24.8 (11.3) months.

3.3. Monetary penalties and cooperation

A growing stream of finance and accounting research examines enforcement actions and reports overwhelming evidence that the penalties for financial misconduct are severe. KLM (2012b) report that the mean (median) monetary penalty imposed on all culpable parties named in a financial misrepresentation enforcement action is $73.25 ($8.5) million. They find monetary penalties are highly systematic and are associated with the firm's ability to pay, the size and severity of shareholder harm resulting from corporate misconduct, and changes in laws and enforcement initiatives. Firms subject to enforcement actions also suffer from a variety of non-regulatory monetary penalties including class action lawsuit settlements, stock price declines, and cost of capital increases.[13]

Cooperating with regulators during the enforcement process is one way that firms can attempt to mitigate monetary penalties imposed on them. We examine all regulatory proceeding disclosures for the sample of 1,059 enforcement actions to see if the SEC or DOJ acknowledged that (1) the firm cooperated or assisted in the disclosure and investigation, and (2) such efforts were considered when determining monetary penalties. When such acknowledgment is cited by regulators, we classify the firm as receiving cooperation credit. This classification process is objective and verifiable because we depend on assessments made by the SEC and DOJ, not the researcher, to identify firm cooperation. It is also comprehensive in that it captures all forms of cooperation deemed valuable to regulators. We identify 292 instances in which the firm is credited for cooperation by regulators. For example, we classify American International Group, Inc. as a cooperator because the SEC's filing of a settled enforcement action against the firm, which includes an $800 million penalty, states "The settlement takes into consideration AIG's cooperation during the investigation and its remediation efforts in response to material

[13] See Feroz, Park and Pastena (1991) and KLM (2008a, 2008b).

weaknesses identified by its internal review" (SEC, 2006b). As another example, we classify ArthroCare Corporation as a cooperator because the SEC's acceptance of its cease and desist offer (which includes no monetary penalty) states that "In determining to accept the Offer, the Commission considered…the substantial cooperation provided by the company in connection with the Commission's investigation" (SEC 2011b). Firms with regulatory proceeding disclosures that lack acknowledgment of cooperation with regulators are classified as non-cooperators.

The top panel of Figure 2 displays the incidence of cooperation credit received by firms in each year of our sample period. The number of annual enforcement actions for financial misrepresentation has grown over time (from an average of 13.5 per year from 1978-89 to 30.0 per year during 1990-99 and 49.8 per year during 2000-11), as has the number of enforcement actions citing firm cooperation. Between 1978 and 1989, for example, only 3.1% of enforcement actions cite firm cooperation, but this rate rises to 12.3% during 1990-99 and to nearly 42% during 2000-11. The number of enforcement actions peaks in 2003 with 67 actions, 27 of which cite firm cooperation. The maximum rate of cooperation occurs in 2010 with 26 of 41 (63.4%) firms cited for cooperation. The dramatic rise in cooperation credit given in the last decade may be due to either an increase in cooperation, an increase in regulators' willingness to give credit for cooperation, or both.

The bottom panel of Figure 2 presents the total magnitude of firm monetary penalties assessed by regulators in financial misrepresentation enforcement actions during our sample years. The yearly variation in monetary penalties follows a pattern similar to that shown in the top panel, with penalties generally increasing over time. The maximum penalties occurred for enforcement actions initiated in 2002 which included the well known and massive financial

misrepresentations of Enron, Tyco, WorldCom, and Adelphia. Seemingly contradicting regulators' claims that they will reduce the monetary penalties of firms that cooperate, however, we find that the vast majority of penalties since 2002 have been assessed against firms that were cited for cooperation. This evidence suggests that firms are actually *penalized* for cooperating with regulators. However, the primary fallacy in this conclusion is that it fails to consider the nature and severity of the violation or the general increase in penalties that followed legal mandates such as the Remedies Act and the SEC's Enforcement Cooperation Initiative in 2001.

Table 3 presents contingency table frequency analyses of the firm being named as a respondent, the assessment of a monetary penalty against the firm, and cooperation credit for the sample of 1,059 enforcement actions. Because these analyses do not control for other factors which may affect monetary penalties and cooperation, we interpret the results of the bivariate tests with caution. Panel A details whether or not the firm was named as a respondent in the enforcement action and whether or not the firm was assessed a monetary penalty. The firm was named as a culpable respondent in 830 (78.4%) of the enforcement actions, of which 200 included a monetary penalty assessed against the firm and 630 did not. Since monetary penalties can only be assessed against the firm if it is named as a respondent, all 200 enforcement actions involving monetary penalties against firms occur in this cell of the contingency table. The conditional 24.1% (200 out of 830) firm penalty rate is therefore higher than the unconditional 18.9% (200 out of 1,059) rate calculated when using the full sample of enforcement actions. This evidence demonstrates the need for an analysis that considers endogeneity or selection bias when examining monetary penalties assessed against firms in an enforcement action.

Panel B of Table 3 presents the incidence of firms receiving cooperation credit and whether or not the firm was named as a respondent in the enforcement action. Of the 292

enforcement actions citing cooperation credit, the vast majority (269 or 92%) named the firm as a respondent. Meanwhile, of the 767 enforcement actions that did not cite cooperation credit, only 561 (73.1%) enforcement actions named the firm as a respondent, which is a difference of 19%. In addition, only 23 of the 229 enforcement actions that do not name the firm as a respondent cite cooperation by the firm. Overall, the data suggests that a cooperating firm faces a 1.3 times greater risk of being named as a respondent or a 4.3 times greater odds of being named as a respondent prior to controlling for other factors.

Panel C of Table 3 presents the incidence of firms receiving cooperation credit and whether or not the firm was assessed a monetary penalty. Consistent with the evidence in Figure 2, we find that firms that cooperate with regulators face a higher risk of being assessed a monetary penalty, relative to those firms that do not cooperate. Specifically, firms receive cooperation credit in 292 enforcement actions, of which 111 (38.0%) assess a monetary penalty against the firm while 181 (62.0%) do not. Meanwhile, of the 767 firms not receiving cooperation credit, only 89 (11.6%) are assessed monetary penalties, a difference of 26.4%. We calculate that a firm that cooperates with regulators faces a 3.3 times greater risk of being assessed a monetary penalty or a 4.7 times increase in the odds of being assessed a monetary penalty prior to controlling for other factors.

3.4. Univariate characteristics of cooperation versus non-cooperation

Table 4 presents a univariate comparison of the various characteristics surrounding enforcement actions, including whether or not firms received cooperation credit from regulators. Regulators assessed a total of $14.4 billion in penalties against firms in the entire sample of 1,059 enforcement actions, resulting in a mean (median) monetary penalty of $17.3 ($0.0) million. Cooperating firms were assessed a significantly higher average penalty of $33.7 million

versus an average penalty of $9.5 million for non-cooperating firms ($p < 0.043$). While the median firm in both groups was not assessed a monetary penalty, a Wilcoxon rank-sum test indicates the distributions for the two groups differed significantly at $p < 0.000$. Monetary penalties assessed against other respondents besides the firm (including employees, non-employee agents, and unrelated firms) totaled $26.2 billion for the entire sample with a mean (median) of $24.7 ($0.1) million per enforcement action. These monetary penalties did not significantly differ between cooperating and non-cooperating firms. As indicated previously, it is also common for firms subject to a regulatory enforcement action to experience a related civil class action lawsuit by shareholders. We find that cooperating firms experience a significantly greater proportion of class action lawsuits compared to non-cooperating firms (56.9% vs. 43.9%), but class action settlement amounts do not differ between the two types of firms.

A comparison of firm characteristics shows sharp differences between firms that received cooperation credit from regulators and those that did not. Cooperating firms report a significantly larger mean (median) market capitalization compared to non-cooperating firms: $13.1 ($1.1) billion versus $4.0 ($0.1) billion. Cooperating firms also exhibit better governance characteristics compared to non-cooperating firms, such as a significantly greater mean proportion of independent board members (59.7% vs. 41.5%) and significantly lower incidence of chairman/CEO duality (71.2% vs. 83.7%). Insider ownership, blockholder ownership, and respondent ownership levels are all significantly lower for cooperating firms as is the median market-to-book ratio. A larger fraction of cooperating firms restated their financial statements (67.1% vs. 47.3%) and retained a “Big 8” auditing firm (92.8% vs. 61.3%) while a smaller fraction of cooperating firms received a “going concern” audit qualification during the violation period (7.2% vs. 29.5%). The fraction of cooperating firms not in existence at the time of the

first regulatory action was also significantly smaller compared to non-cooperating firms (25.0% vs. 47.1%). This is unsurprising because if firms involved in misconduct no longer exist in their original form when the initial regulatory action is filed, the original firms are both less likely to be named as a respondent and unable to cooperate with regulators.

Specific characteristics of the violation also differ markedly between firms that cooperated with regulators and those that did not. The mean (median) violation period was significantly longer at 46.1 (26.0) months for cooperating firms compared to 31.2 (24.0) months for non-cooperating firms. Enforcement actions involving cooperating firms were significantly less likely to include top-level executive respondents (46.6% vs. 76.5%), a recidivist respondent (13.4% vs. 19.8%), and fraud charges (57.5% vs. 80.8%). However, cooperating firms were more likely than non-cooperating firms to have a violation related to foreign bribery (29.1% vs. 2.6%) or motivated by the desire to meet external earnings expectation (29.8% vs. 15.3%). With respect to shareholder harm resulting from the violation, the mean (median) maximum investor loss (defined as the abnormal loss an investor would experience by purchasing the firm's stock at its highest point during the violation period and selling at the close following the first public announcement related to the enforcement action) was significantly lower for cooperating firms at 55.8% (53.0%) versus 70.2% (68.9%) for non-cooperating firms.

Collectively, Table 4 suggests that significant univariate differences exist between the monetary penalties, firm characteristics, and violation characteristics of cooperating and non-cooperating firms. The following two sections discuss a series of multivariate analyses that we undertake to further examine the potential monetary benefits of cooperation to firms. Since monetary penalties are only observable for firms named as respondents in enforcement actions, we account for this selection bias using a two-stage process commonly referred to as a Heckman

correction. In the next section, we model the probability of a firm being named as a respondent in the enforcement action as the first stage of the Heckman (1979) procedure. Using estimates from the first stage, we then examine the monetary benefits of cooperation to firms in Section 5.

4. Determinants of the firm being named as a respondent in an enforcement action

Regulators consider many factors when determining whether or not to name the firm as a respondent in an enforcement action. From a legal standpoint, a corporation is liable for the actions of its employees as long as the employees act within their scope of employment and the intent of the behavior was, at least in part, to benefit the corporation. In every investigation of misconduct, therefore, regulators must consider both the corporation and individuals within the corporation as potential targets. Holding firms accountable for misconduct may deter future crime (Arlen and Kraakman, 1997), both within the same company (by changing the corporate culture or mandating remedial actions that decrease the likelihood of future problems) and within an industry (by signaling that pervasive misconduct will not be tolerated). Depending on the facts and circumstances of a particular offense, however, it may be appropriate to rely on other means to resolve the action rather than charging or indicting the firm. For example, pre-trial agreements, also known as deferred prosecution agreements (DPA) and non-prosecution agreements (NPA) can be a compromise between not prosecuting and obtaining a judgment or conviction. Additionally, regulators may choose not to prosecute the firm if shareholders and other constituencies have already suffered disproportionate harm.

We model the probability of the firm being named as a respondent in an enforcement action with the selection equation of a Heckman selection model. This equation allows us to correct for the selection bias inherent in our sample because monetary penalties assessed against the firm are only observable when the firm is named as a respondent in the enforcement action.

Recall from Table 3, Panel A, that 229 (21.6%) of the enforcement actions in our sample involve zero penalties because the firm was not named as a respondent. The dependent variable of the selection equation, *Firm named*, takes the value of one if the firm was named as a respondent in an enforcement action and zero otherwise.

The independent variables of the selection equation are the factors considered by the SEC and DOJ when determining whether or not to bring charges against the firm (U.S. Department of Justice, 1997; U.S. Securities and Exchange Commission, 2001). Among the factors considered are: (1) the nature of the misconduct; (2) how the misconduct arose; (3) pervasiveness of misconduct; (4) history of misconduct; (5) size of harm; (6) discovery and remedial actions; (7) cooperation; (8) firm status; and (9) alternative remediation. Table 5 details regulators' disclosures regarding the factors they consider, as well as the proxy variables used to model the criteria for the 1,059 financial misrepresentation enforcement actions in our sample. The variable definitions are presented in the Appendix Table A-1, and their construction is detailed in KLM (2008a, 2008b, 2012a, 2012b).

(1) Nature of the misconduct: We control for the nature and seriousness of the offense with proxies for the type of offense (e.g., *Fraud charges included, Insider trading, Offering related*, *Merger related*) and auditor quality and involvement (*Big 8 auditor*, *Misled auditor*).

(2) How the misconduct arose: Regulators indicate an interest in knowing if firms have poor tone-at-the top, pressure to achieve specific performance levels, or controls unable of detecting misconduct. We control for these factors with proxies for firm performance (*Meet expectations*, *Going concern*, *Inadequate internal controls*) and corporate governance strength (*Chm/CEO duality*, *Board size*, *Board independence*).

(3) Pervasiveness of misconduct: We control for how widespread the misconduct is throughout the firm with variables measuring the number of law violations *(# Violations*) and the types of individual respondents named in the enforcement action (e.g., *# C-level respondents*, *# Employee respondents*).

(4) History of misconduct: Regulators are concerned with how long the misconduct occurred, whether misconduct facilitated an initial public offering, and whether the firm has previous involvement in criminal, civil, and regulatory enforcement actions. We control for these factors with a variety of proxies, including *Violation period (months)*, *IPO related*, *Recidivist respondent,* and *Organized crime involved*.

(5) Size of harm: Regulators indicate that their decision to name a firm as a respondent depends in part on the extent of harm already suffered by shareholders and other stakeholders. We use stock return (e.g., *Stock run-up*, *Maximum loss)* and stock ownership (*Respondent ownership*, *Blockholder ownership, Public float*) measures to control for this harm.

(6) Discovery and remedial actions: We control for the firm's commitment to learning about reporting the misconduct (*Conducted internal investigation, Self-reported violation*) as well as any remedial actions taken by the firm. We consider termination of culpable managers (e.g., *Chm/Pres/CEO respondent terminated*, *% Executive respondents terminated*) and restatements (*Restated financial statements)* to be remedial actions.

(7) Cooperation: We control for cooperation with or obstruction of the investigation (e.g., *Cooperation credit*, *Impeded investigation*, *Response period (days)*). *Cooperation credit*, which is a dummy variable set to 1 if documents filed in the regulatory proceedings give the firm credit for cooperating with authorities and 0 otherwise, is our main variable of interest throughout this study.

(8) Firm status: We control for whether or not the firm was still in existence when the first regulatory proceeding was filed (*Firm not in existence*). The original firm may no longer be in existence due to merger, acquisition, bankruptcy, or liquidation, which impacts regulators' abilities to hold the firm accountable for past misconduct. In order to ensure model identification, the *Firm not in existence* variable is included in the selection equation, but excluded from the outcome equation as this variable is correlated with whether or not a firm is named in an enforcement action, but is uncorrelated with monetary penalties (therefore satisfying the requirements necessary to be a valid instrument).[14]

(9) Alternative remediation: Regulators indicate that their prosecution decision is based in part on whether other parties have adequately held the firm accountable for its misconduct. We control for other potential remedies such as private civil litigation or the prosecution of culpable individuals (*Log[private settlements ($mm)]*, *Log[other penalty ($mm)]*, *Regulatory Sanction Index*).

In addition to the factors considered by regulators, the selection equation controls for firm size (*Log[market cap ($mm)]*) and market valuation (*Market-to-book ratio*). We also control for whether the enforcement action has been completed (*Enforcement action completed*).[15] Our review of regulatory proceeding disclosures suggests that firms named in an enforcement action are typically named early in the regulatory enforcement process. Thus, we control for (but do not exclude) open enforcement actions in our analyses. Finally, we control for the timing of important regulatory activities that may be associated with the probability of a firm being named in an enforcement action (*Post-Remedies Act*, *Post-cooperation initiative*).

[14] Firm-level penalties cannot be assessed against a corporation that is no longer in existence. Viable firms that fail to report before regulators as required by Section 13 of the Exchange Act often have their securities revoked by an Administrative Law Judge as part of the enforcement process and are considered as being "named" in the enforcement process.

[15] Enforcement actions are coded as completed if the enforcement release indicates that it concludes the action.

Table 6 presents the results of the probit selection equation using a full maximum likelihood estimator.[16] We find that the probability of a firm being named as a respondent in an enforcement action is significantly associated with many proxies for how the misconduct arose, the pervasiveness of misconduct, how long the misconduct occurred, the size of harm, whether cooperation is given to regulators, and remedial actions taken by the firm. Although we find little support for the nature of the misconduct being a determining factor in prosecuting the firm (no proxy variables are significant at the $p < 0.05$ level), we find strong evidence regarding how the misconduct arose. Specifically, we find that larger boards (a proxy often associated with poor governance), inadequate internal controls, and going concern qualifications noted by the auditor during the violation period are all positively and significantly associated with the firm being named as a respondent in the enforcement action. Regulators are also more likely to prosecute the firm if the misconduct is motivated by a desire to meet internal or external expectations of sales and/or earnings. Taken together, these factors may be construed as a proxy for weak management that has poor control over the organization.

We also find that proxies for the pervasiveness of the misconduct and the length of the misconduct period are significantly associated with a firm being named as a respondent. First, the number of employees listed as respondents in an enforcement action is negatively related to the probability of the firm being named as a respondent. Although this variable, *# Employee respondents*, provides some evidence as to the pervasiveness of the misconduct in the organization, it may also proxy for the availability of alternative remediation mechanisms since a large number of culpable employee respondents provides a potential pool for restitution and other means of punitive sanctions. If this is the case, the negative coefficient on this variable is to

[16] We also run the two-stage efficient estimator for robustness and the results are effectively the same, albeit with a slightly higher estimate of the effect of cooperation on monetary penalties in the outcome equation.

be expected. Meanwhile, the number of different violations and the length of the violation period are both positively associated with the firm being named as a respondent, suggesting that possible complicity in or condoning of misconduct that it is allowed to continue over time increases the probability of regulatory action against firms.

It also appears that the amount of harm inflicted upon shareholders and other constituencies plays an important role in determining whether to prosecute the firm. For example, our estimate of the maximum loss borne by shareholders is positively associated with the firm being named as a respondent. This suggests that firms are held responsible for misconduct that has a long-term deleterious effect on shareholders. We also find a positive and significant coefficient on the variable *Initial market reaction*, which captures the abnormal stock market reaction to the first public announcement of the enforcement action. The positive coefficient indicates that a more positive (negative) initial stock price reaction increases (decreases) a firms' probability of being prosecuted. We can interpret this finding in two ways: (1) regulators refrain from prosecuting firms whose shareholders have already borne steep losses, or (2) firms are more likely to be named as respondents when they attempt to control, mitigate, or otherwise withhold initial information associated with the misconduct. Finally, we find that the proportion of the firm's outstanding shares owned by individual respondents is positively associated with a firm being named as a respondent.

Cooperation with regulators, the extent of remedial actions taken by the firm, and the prosecution of other culpable parties are also highly predictive of whether or not a firm is named as a respondent. Firms that are cited for cooperation by regulators and those that are transparent about the misconduct to the public are significantly ($p < 0.05$) more likely to be named as a respondent in an enforcement action. The mean partial effect of cooperation increases the

probability of the firm being named in the enforcement action by 11.8%, from 75.7% to 87.5%, and this increase is significant at the $p < 0.000$ level.[17] These results are consistent with Files (2012) who also finds a positive association between cooperation and the incidence of enforcement actions. Although the SEC and DOJ claim that cooperation will reduce the likelihood of corporate prosecution, it is also likely that the firm's cooperation and transparency lead to the discovery of the misconduct in the first place and enable regulators to more easily identify responsible parties. Meanwhile, the percentage of culpable individual respondents whose employment is terminated and the amount of penalties assessed against parties other than the firm reduce the probability of the firm being named as a respondent. Thus, the probability of regulatory action against firms decreases when culpable individuals are held personally accountable for their misconduct.

Three other factors also contribute to the decision by regulators to bring charges against the firm. First, the firm is less likely to be named as a respondent in an enforcement action when the firm is no longer in existence due to acquisition, bankruptcy, liquidation, or cessation. A firm is also less likely to be named as a respondent following the passage of the Remedies Act on October 15, 1990. Finally, a firm is more likely to be named as a respondent if the enforcement action (and all associated regulatory proceedings) is complete.

5. Determinants of monetary penalties assessed against the firm in an enforcement action

5.1. Criteria used by regulators

After deciding to name a firm in an enforcement action, regulators must determine whether or not to assess monetary penalties against the firm. Factors considered by the SEC and

[17] The probability can be compared to the 78.4% unconditional mean for the full sample, the conditional mean of 92.1% for firms that cooperated, and the conditional mean of 73.1% for firms that did not cooperate from Table 3. When instead calculating the partial effect of cooperation at the means, cooperation increases the probability of the firm being named in an enforcement action by 9.6%, from 86.2% to 95.8% (significant at the $p < 0.001$ level).

DOJ (U.S. Securities and Exchange Commission, 2006a; U.S. Department of Justice, 2011) when determining penalties include: (1) the direct benefit to the firm resulting from the misconduct; (2) harm already suffered by shareholders and any potential harm resulting from a firm penalty; (3) the need to deter a particular type of offense; (4) pervasiveness of misconduct; (5) the intent of the perpetrators; (6) discovery and remedial actions; (7) cooperation; (8) the strength of the firm's pre-existing compliance program; and (9) history of misconduct. Table 7 provides more detailed explanations of these criteria. The proxy variables used to model the penalty determination criteria for our sample of 1,059 financial misrepresentation enforcement actions are the same as those proxy variables used in the selection equation and discussed in Section 4. Variable definitions are provided in Appendix Table A-1.

5.2. Determinants of monetary penalties other than cooperation

Table 8 presents the results of the outcome equation in the Heckman selection model. The dependent variable, *Firm penalty*, is the natural logarithm of the total disgorgement, prejudgment interest, and fines (in millions of dollars) assessed against the firm by regulators. Disgorgement and prejudgment interest represent recoupment of ill-gotten gains and additional profit earned by investing the ill-gotten gains, respectively. Meanwhile, fines are intended to punish the firm. The courts have significant discretion in determining each of these remedies (Buckberg and Dunbar, 2008), and they are all intended to deter future misconduct. Thus, we consider all three in our calculation of firm penalties. We find that monetary penalties are highly systematic and significantly associated with many criteria considered by regulators, including the direct benefit to the firm, shareholder harm, and remedial efforts.

Monetary penalties are significantly larger for firms receiving greater direct benefit from the misconduct. Specifically, monetary penalties are positively related to bribery charges and

pretrial agreements with regulators. Bribery of a foreign official is a clear violation of the FCPA and benefits the firm directly through attempts to influence sales, reduce taxes, or gain political or regulatory favor. A large proportion of the sample firms (41.9%) where the financial misrepresentation centers on foreign bribery misconduct also enter into pretrial agreements, which explains the positive association between monetary penalties and pretrial agreements. Firm monetary penalties are negatively related to misconduct involving self-dealing, such as theft or misappropriation by individual participants.

Monetary penalties are also significantly associated with proxies for the harm shareholders and other constituencies have already suffered or have the remaining potential to suffer. These proxies can also be viewed as indicators of gains received by the firm due to the misconduct. Maximum loss and length of the violation period are positively associated with the size of the monetary penalties assessed against the firm, suggesting that firms are penalized more when the violation period was longer and created more opportunity for shareholder harm/firm gain. Meanwhile, blockholder ownership, primarily indicating the proportional share ownership of institutions, is negatively related to monetary penalties suggesting that large influential blockholders may be injured with large penalties. In addition, the announcement cumulative abnormal return (CAR) (defined as the cumulative market-adjusted return of the event dates associated with the enforcement action) is positively and significantly ($p < 0.014$) related to monetary penalties indicating that firms with less shareholder harm/firm gain are more likely to incur large monetary penalties.

Certain characteristics of the misconduct are also significant determinants of monetary penalties. We find that firms with option backdating violations and a greater number of affiliated firms and non-firm employed respondents cited in the enforcement action receive smaller

monetary penalties. However, violations occurring in conjunction with a primary or secondary offering of securities result in increased firm penalties. The *Regulatory Sanction Index* variable, developed by KLM (2012b), is also a positive and significant determinant of monetary penalties. The *Regulatory Sanction Index* measures the level of intent by considering the number of respondents, severity of the misconduct, number of regulatory actions required, and non-monetary sanctions imposed on all respondents (heavily weighted to criminal sanctions such as time sentenced to incarceration). This index also proxies for alternative remedies assessed against the firm, which may influence regulators' decisions regarding monetary penalties. Consistent with the criteria set forth by regulators, our findings suggest that intentional misrepresentations are punished more severely.

While regulators may reward certain types of remedial acts when determining monetary sanctions, the firms in our sample show a positive relationship between monetary penalties and the percentage of executive respondents terminated by the firm. Although terminating the perpetrators is an important step, the fact that executives instigated or facilitated the misconduct to a degree where termination was necessary can signal high-level involvement by management. In these cases, regulators appear to hold the firm accountable for the actions of senior management by imposing steeper penalties. We also find a positive relationship between monetary penalties and the number of prior public announcements made by the firm leading up the regulatory action. We posit two potential explanations for this finding. First, firms with more egregious law violations likely make more public announcements regarding the progression of the action (i.e. Enron, WorldCom, and Tyco) or, second, transparency of the firm allows regulators to penalize the firm more effectively (see, e.g., Files 2012).

Lastly, we find that penalties are greater for larger firms (measured by the natural logarithm of market capitalization in millions of dollars) and smaller for firms whose associated enforcement action is complete. The latter finding suggests that firms suffer greater penalties when they are unable to quickly and expeditiously resolve the enforcement action.

5.3. Effects of cooperation and internal investigations on monetary penalties

We find that the extent of cooperation provided by the firm during the enforcement action results in both a statistically and economically significant reduction to the firm's monetary penalties. Firms specifically cited for cooperation by regulators in enforcement actions experience substantially smaller monetary penalties than firms not cited for cooperation ($p < 0.001$), and this result is robust to controlling for self-selection and other criteria used by regulators when determining monetary penalties. The marginal effect of being cited for cooperation is a 34.7% reduction in monetary penalties (conversely, not cooperating results in a 53.1% increase in monetary penalties). Considering the average penalty assessed against our sample firms ($17.3 million), this translates to a $6.0 million benefit from cooperation. We also find that firms are penalized significantly less when they conduct an internal investigation and provide the results to regulators ($p < 0.031$). The marginal effect is a 19.1% reduction in monetary penalties for a firm that conducted an internal investigation and provided the results to regulators (conversely, a 23.6% increase in penalties for a firm not providing this form of cooperation). Marginal effects calculated from the coefficients in Table 8 (and displayed in Table 9) indicate that firms receiving cooperation credit from regulators *and* conducting an internal investigation reduce their penalties by 47.1%, or $8.2 million for an average penalty. Firms electing neither to cooperate during the enforcement action nor to conduct an internal investigation experience an 89.2% increase in penalties relative to those firms electing to do

both. Although cooperation increases the probability of the firm being named as a respondent in an enforcement action, our findings clearly indicate that regulators systematically offer leniency to cooperating firms when determining monetary penalties. In addition, the economic benefits accruing to cooperating firms appear to be substantial and distinct from the benefits of internal investigations.

5.4. Alternative estimates of the benefits of cooperation and internal investigations

We also estimate the benefits of cooperation by running the Heckman two-step efficient estimator and a Structural Equations Model allowing for error covariance between the equations. Each of the alternative methods (coefficients not reported but available on request) results in a statistically significant coefficient on the variable *Cooperation credit*. Relative to the Heckman full maximum likelihood estimator, both methods estimate a slightly higher probability of a firm being named as a respondent and a slightly lower estimate of the monetary benefits of cooperation. In terms of the monetary benefits of internal investigations, the Heckman two-step efficient estimator (Structural Equations Model) produces a higher (lower) estimate compared to the Heckman full maximum likelihood estimator.

Table 9 compares the benefits of cooperation based on the Heckman full maximum likelihood estimator (as presented in the previous section) to those found when using the Heckman two-step efficient estimator and the Structural Equations Model. The percentage change in monetary penalties for firms conducting (not conducting) an internal investigation varies the most between estimators, with the Heckman full maximum likelihood estimator reporting a change in penalties of -19.1% (23.6%) in Panel A (Panel B) and the Heckman two-step efficient estimator reporting an change in penalties of -21.2% (26.8%). The Structural Equations Model resulted in change in penalties of only -12.6% (14.4%). The cooperation credit

estimate is more stable, changing from -34.7% (53.1%) using the Heckman full maximum likelihood estimator to -31.0% (45.0%) with the Heckman two-step efficient estimator and -31.8% (46.7%) with the Structural Equations Model. The benefits of conducting both an internal investigation and cooperating with regulators changes from -47.1% (89.2%) (when using the Heckman full maximum likelihood estimator) to -45.6% (83.9%) using the Heckman two-step and -40.4% (67.7%) with Structural Equations Model. Even using the least beneficial estimates, the results indicate that there are substantial reductions in monetary penalties to firms that cooperate with regulators.

6. Determinants of firm cooperation cited by regulators

In Table 10, we explore the cross-sectional determinants of a firm being credited for cooperation by regulators. We use a logit regression model where the dependent variable, *Cooperation credit*, takes the value of one if the firm was credited with cooperation and zero otherwise. The independent variables are the same as those used in the prior analyses and are defined in the Appendix Table A-1. The independent variables are grouped according to various characteristics including firm, governance and ownership, nature of the violation, culpable parties, size of harm, firm response, and legal mandates.

The regression results indicate that firms with lower relative market valuations as measured by the market-to-book ratio, firms still in existence, and firms that use one of the Big 8 (now Big 4) auditing firms are more likely to cooperate. Also firms with relatively larger boards of directors are less likely to cooperate. The nature of the violation also explains whether or not firms cooperate. Firms whose misrepresentation centers on foreign bribery violations are highly likely to cooperate as are firms whose violations involve inadequate internal controls and are motivated by meeting internal or external sales or earnings expectations. Firms are less likely to

cooperate when fraud is charged under either 17(a) during the issue of a security or 10(b) with respect to the trading of securities on the secondary market.

Firms are more likely to be credited with cooperation the faster they ferret out and respond to the misconduct once they become aware of it, as indicated by the inverse relationship between the response period and *Cooperation credit*. Finally firms are more likely to cooperate in the period starting from the passage of the Remedies Act in 1990 up to the SEC's Cooperation Initiative program in 2001. It is interesting to note that this period precedes some of the most egregious financial misrepresentation enforcement actions including Adelphia, Enron, Peregrine Systems, Tyco, WorldCom, and Xerox, to name a few.

7. Conclusion

Previous research establishes that firms pay large monetary penalties for violations of securities laws. This paper provides evidence that these monetary penalties are significantly reduced for firms that ferret out the cause of the misconduct, engage independent parties to conduct thorough and impartial internal investigations, and cooperate with regulators. We track all 1,059 SEC and DOJ enforcement actions from 1978 through 2011 for financial misrepresentation, and our main findings are as follows:

(1) Firms that cooperate with regulators in an enforcement action for financial misrepresentation face greater risk of having charges levied against them. The mean partial effect increases by 11.8% from a probability of 75.7% to 87.5%.

(2) Firms that perform an internal investigation and make the results available to regulators pay 19.1% less in monetary penalties. Firms that are subsequently credited with cooperation by regulators pay 34.7% less in monetary penalties. Firms that do both pay

47.1% less, suggesting that cooperation with regulators is beneficial above and beyond internal investigations.

(3) Cooperation credit is more likely for firms that have lower market-to-book ratios, are still in existence, are audited by one of the Big 8 accounting firms, have smaller boards of directors, are charged with foreign bribery or internal controls violations, have misconduct associated with meeting unreasonable internal or external expectations, respond faster to the discovery of misconduct, and misrepresent financial statements in the period from October 15, 1990 (corresponding to the enactment of the Securities Enforcement Remedies and Penny Stock Reform Act) up until October 23, 2001 (the SEC public announcement of their framework for evaluating cooperation). The firm faces a lower probability of being credited for cooperation when a more egregious violation occurred that includes fraud charges.

In total, the evidence suggests that even though regulators are not transparent as to the specific dollar amount that firm monetary penalties are affected when they credit a firm for cooperation, the estimated penalty reduction is substantial.

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Table 1

Regulatory enforcement actions for financial misrepresentation

This table categorizes the total number of enforcement actions initiated from 1978 through 2011 according to the type of security registered with the Securities and Exchange Commission (SEC). The sample of 1,099 enforcement actions is taken from the Federal Securities Regulation (FSR) database in Karpoff, Koester, Lee, and Martin (2012) and represents the universe of all regulatory enforcement actions initiated for financial misrepresentation from 1978 through 2011. To be included in the sample, the violation must include charges under the books and records, internal controls, or circumvention provisions of the Securities and Exchange Commission Act of 1934, as amended by the Foreign Corrupt Practices Act of 1977.

Security type	# Enforcement actions
Common equity:	
Ordinary shares	1,026
American Depository Receipts (ADR)	33
Total common equity	1,059
Other securities:	
Limited partnerships	15
Debt	9
Preferred stock	5
Real Estate Investment Trusts (REITs)	4
Cooperatives	2
Annuities	1
Mutual funds	1
Registration/initial public offerings (IPO)	3
Total other securities	40
Total enforcement actions	1,099

Table 2

Types of events related to an enforcement action for financial misrepresentation

This table presents the number and type of events associated with the 1,059 enforcement actions for financial misrepresentation from 1978 through 2011. The "Total # of Events" column indicates the frequency with which a particular event occurs for all enforcement actions in our sample. The columns under "Enforcement actions with ≥ 1 event" indicate the number and percentage of enforcement actions in our sample for which the indicated event occurs at least once. The columns under "Months in period/months after violation" refer to the mean and median length of the period indicated (e.g., violation period or regulatory period) or the mean and median number of months after the end of the violation period that the indicated event occurred. The "Violation period" refers to the length of time that the violation occurred. The "Trigger event" is a firm-announced event that indicates to the public a transgression may have occurred. A "Restatement event" is either the announcement that a restatement is likely or the actual filing of restated financial statements by the firm. A "Class action filing" is the filing of a private civil litigation lawsuit related to the subsequent enforcement action. An "Informal inquiry" is the announcement by the firm that it has been requested to voluntarily provide information to regulators about a potential law violation. A "Formal investigation" is the announcement by the firm that it has received a formal order of investigation, was issued a subpoena, or was the subject of a search warrant by regulators. A "Wells notice" is the announcement by the firm or other target in an enforcement action that they received a notice from regulators stating the intent to file an enforcement action. A "Class action settlement" is the announcement by the firm or attorneys that there has been a settlement agreed upon in a private civil class action lawsuit related to the enforcement action. "Regulatory proceedings" are the filing of administrative, civil, or criminal actions by regulators. Most enforcement actions involve the filing of more than one regulatory proceeding. "Regulatory period" refers to the length of time during which regulatory proceedings were filed in an enforcement action.

	Total #	Enforcement actions with ≥ 1 event		Months in period/months after violation	
Period/event	of events	N	% of sample	Mean	Median
Violation period				35.6	25.1
Trigger event	876	870	82%	1.6	2.2
Restatement event	1,399	560	53%	2.5	3.4
Class action filing	597	509	48%	3.4	2.9
Informal inquiry	268	266	25%	5.1	4.4
Formal investigation	618	569	54%	8.3	7.0
Wells notice	158	136	13%	28.0	26.3
Class action settlement	619	503	47%	29.2	25.7
Regulatory proceedings:					
Initial	1,059	1,059	100%	30.4	29.7
Subsequent	4,491	889	84%	n/a	n/a
Regulatory period				24.8	11.3
Total	10,085			90.7	83.1

Table 3

Contingency tables of the incidence of monetary penalties, the firm being named as a respondent, and cooperation credit

Panel A presents a 2x2 contingency table of the firm being named as a respondent and the incidence of monetary penalties against the firm. In order to be assessed monetary penalties, the firm must be named as a respondent in the enforcement action. Panel B presents a 2x2 contingency table of the firm receiving credit for cooperation and whether or not it was named as a respondent in the enforcement action. Panel C presents a 2x2 contingency table of the firm receiving credit for cooperation and whether or not it was assessed a monetary penalty. Risk ratios and odds ratios are presented below each table.

Panel A: Firm named respondent by firm monetary penalty

	Firm penalty			
Firm named	Yes	No	Total	%
Yes	200	630	830	78.4%
No	0	229	229	21.6%
Total	200	859	1,059	
%	18.9%	81.1%		

Risk ratio = (200 / 830) / (0 / 229) = n/a
Odds ratio = (200 × 229) / (630 × 0) = n/a

Panel B: Cooperation credit by firm named as respondent

	Firm named			
Cooperation credit	Yes	No	Total	%
Yes	269	23	292	27.6%
No	561	206	767	72.4%
Total	830	229	1,059	
%	78.4%	21.6%		

Risk ratio = (269 / 292) / (561 / 767) = 1.3
Odds ratio = (269 × 206) / (23 × 561) = 4.3

Panel C: Cooperation credit by firm monetary penalty

	Firm penalty			
Cooperation credit	Yes	No	Total	%
Yes	111	181	292	27.6%
No	89	678	767	72.4%
Total	200	859	1,059	
%	18.9%	81.1%		

Risk ratio = (111 / 292) / (89 / 767) = 3.3
Odds ratio = (111 × 678) / (181 × 89) = 4.7

Table 4

Characteristics of enforcement actions by cooperation credit

This table presents group tests of the 1,059 enforcement actions for financial misrepresentation against publicly-traded firms with common equity or ADRs from 1978 – 2011 partitioned on whether or not the firms were given credit for cooperation. P-values are presented for a parametric two-sample t test for means, non-parametric two-sample Wilcoxon rank-sum (Mann-Whitney) test where medians are reported, and a test of equal proportions for frequency counts. An * next to p-values indicates a test assuming unequal variances was used in lieu of equal variances based on the rejection of a variance ratio test of equal variances at the 0.05 significance level. Variable definitions are presented in Appendix Table A-1.

			Cooperation credit		
		All	**Yes**	**No**	
		(1,059)	**(292)**	**(767)**	**P-value**
Monetary penalties					
Firm penalty ($mm)	Sum	14,364.3	9,027.1	5,337.2	
	Mean	17.3	33.7	9.5	0.043*
	Median	0.0	0.0	0.0	0.000
Other penalty ($mm)	Sum	26,185.5	10,109.5	16,076.1	
	Mean	24.7	34.6	21.0	0.593*
	Median	0.1	0.0	0.1	0.777
Settled private class actions	N	503	166	337	0.000
Private settlements ($mm)	Sum	56,789.3	25,897.5	30,891.7	
	Mean	112.9	156.0	91.7	0.261
	Median	7.5	9.4	6.9	0.143
Firm characteristics					
Market cap ($mm)	Mean	6,514.3	13,081.0	4,011.1	0.000*
	Median	133.0	1,116.4	57.6	0.000
Market-to-book ratio	Mean	41.6	2.0	56.8	0.177*
	Median	1.5	1.4	1.6	0.015
Board independence	Mean	46.5%	59.7%	41.5%	0.000
	Median	50.0%	62.5%	41.7%	0.000
Chm/CEO duality	N	850	208	642	
	Col %	80.3%	71.2%	83.7%	0.000
Insider ownership	Mean	31.6%	20.4%	35.9%	0.000
	Median	25.3%	10.1%	32.5%	0.000
Blockholder ownership	Mean	42.8%	35.3%	45.6%	0.000
	Median	41.3%	31.5%	44.7%	0.000
Respondent ownership	Mean	17.1%	6.6%	21.1%	0.000
	Median	4.8%	0.1%	11.1%	0.000
Firm not in existence	N	434	73	361	
	Col %	41.0%	25.0%	47.1%	0.000
Restated financial statements	N	559	196	363	
	Col %	52.8%	67.1%	47.3%	0.000
Big 8 auditor	N	741	271	470	
	Col %	70.0%	92.8%	61.3%	0.000
Going concern	N	247	21	226	
	Col %	23.3%	7.2%	29.5%	0.000
Violation characteristics					
Stock run-up	Mean	2,659.7%	6,373.5%	1,245.8%	0.307*
	Median	131.8%	142.0%	129.1%	0.329
Maximum loss	Mean	66.2%	55.8%	70.2%	0.000
	Median	65.2%	53.0%	68.9%	0.000
Violation period (months)	Mean	35.3	46.1	31.2	0.000
	Median	25.0	36.0	24.0	0.000
Fraud charges included	N	788	168	620	
	Col %	74.4%	57.5%	80.8%	0.000
Bribery charges included	N	105	85	20	
	Col %	9.9%	29.1%	2.6%	0.000
Chm/Pres/CEO respondent	N	723	136	587	
	Col %	68.3%	46.6%	76.5%	0.000
Recidivist respondent	N	191	39	152	
	Col %	18.0%	13.4%	19.8%	0.015
Meet expectations	N	204	87	117	
	Col %	19.3%	29.8%	15.3%	0.000

Table 5

Criteria used in determining whether to name the firm as a respondent in an enforcement action

This table summarizes the criteria used in determining whether to charge a corporation in an enforcement action as presented by the Securities and Exchange Commission in the Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934 and Commission Statement on the Relationship of Cooperation to Agency Enforcement Decisions (Securities Exchange Act of 1934 Release No. 44969, October 23, 2001) (column 1) and described in the Department of Justice's U.S. Attorneys' Manual Principles of Federal Prosecution of Business Organizations (USAM 9-28.000 et seq.) (column 2). Column 3 outlines the proxy variables (defined in Appendix Table A-1) used in the selection model for estimating whether or not the firm was named as a respondent.

Securities and Exchange Commission	U.S. Attorney's Manual	Proxy variables
What is the nature of the misconduct involved? Did it result from inadvertence, honest mistake, simple negligence, reckless or deliberate indifference to indicia of wrongful conduct, willful misconduct or unadorned venality? Were the company's auditors misled?	The nature and seriousness of the offense, including the risk of harm to the public, and applicable policies and priorities, if any, governing the prosecution of corporations for particular categories of crime (see USAM 9-28.400);	Fraud charges included Bribery charges included Offering related Insider trading Option backdating related Merger related Self-dealing Misled auditors Big 8 auditor
How did the misconduct arise? Is it the result of pressure placed on employees to achieve specific results, or a tone of lawlessness set by those in control of the company? What compliance procedures were in place to prevent the misconduct now uncovered? Why did those procedures fail to stop or inhibit the wrongful conduct?	The existence and effectiveness of the corporation's pre-existing compliance program (see USAM 9-28.800);	Chm/CEO duality Board size Board independence Meet expectations Inadequate internal controls Going concern
Where in the organization did the misconduct occur? How high up in the chain of command was knowledge of, or participation in, the misconduct? Did senior personnel participate in, or turn a blind eye toward, obvious indicia of misconduct? How systemic was the behavior? Is it symptomatic of the way the entity does business, or was it isolated?	The pervasiveness of wrongdoing within the corporation, including the complicity in, or the condoning of, the wrongdoing by corporate management (see USAM 9-28.500);	Chm/Pres/CEO respondent # C-level respondents # Employee respondents # Other respondents # Violations
How long did the misconduct last? Was it a one-quarter, or one-time, event, or did it last several years? In the case of a public company, did the misconduct occur before the company went public? Did it facilitate the company's ability to go public?		Violation period (months) IPO related Reverse merger/development stage
	The corporation's history of similar misconduct, including prior criminal, civil, and regulatory enforcement actions against it (see USAM 9-28.600);	Recidivist respondent Organized crime involved
How much harm has the misconduct inflicted upon investors and other corporate constituencies? Did the share price of the company's stock drop significantly upon its discovery and disclosure?	Collateral consequences, including whether there is disproportionate harm to shareholders, pension holders, employees, and others not proven personally culpable, as well as impact on the public arising from the prosecution (see USAM 9-28.1000);	Initial market reaction Stock run-up Maximum loss Announcement CAR Respondent ownership Public float Blockholder ownership
How was the misconduct detected and who uncovered it?		Self-reported violation

Table 5 (con't)

Criteria used in determining whether to name the firm as a respondent in an enforcement action

Securities and Exchange Commission	U.S. Attorneys' Manual	Proxy variables
What steps did the company take upon learning of the misconduct? Did the company immediately stop the misconduct? Are persons responsible for any misconduct still with the company? If so, are they still in the same positions? Did the company promptly, completely and effectively disclose the existence of the misconduct to the public, to regulators, and to self-regulators? Did the company cooperate completely with appropriate regulatory and law enforcement bodies? Did the company identify what additional related misconduct is likely to have occurred? Did the company take steps to identify the extent of damage to investors and other corporate constituencies? Did the company appropriately recompense those adversely affected by the conduct?	The corporation's remedial actions, including any efforts to implement an effective corporate compliance program or to improve an existing one, to replace responsible management, to discipline or terminate wrongdoers, to pay restitution, and to cooperate with the relevant government agencies (see USAM 9-28.900);	# Prior public announcements Chm/Pres/CEO respondent terminated % Executive respondents terminated % Respondents terminated
What processes did the company follow to resolve many of these issues and ferret out necessary information? Were the Audit Committee and the Board of Directors fully informed? If so, when?		Restated financial statements
Did the company commit to learn the truth, fully and expeditiously? Did it do a thorough review of the nature, extent, origins and consequences of the conduct and related behavior? Did management, the Board or committees consisting solely of outside directors oversee the review? Did company employees or outside persons perform the review? If outside persons, had they done other work for the company? Where the review was conducted by outside counsel, had management previously engaged such counsel? Were scope limitations placed on the review? If so, what were they?		Conducted internal investigation
Did the company promptly make available to our staff the results of its review and provide sufficient documentation reflecting its response to the situation? Did the company identify possible violative conduct and evidence with sufficient precision to facilitate prompt enforcement actions against those who violated the law? Did the company produce a thorough and probing written report detailing the findings of its review? Did the company voluntarily disclose information that our staff did not directly request and otherwise might not have uncovered? Did the company ask its employees to cooperate with our staff and make all reasonable efforts to secure such cooperation?	The corporation's timely and voluntary disclosure of wrongdoing and its willingness to cooperate in the investigation of its agents (see USAM 9-28.700);	Cooperation credit Impeded investigation Response period (days)
What assurances are there that the conduct is unlikely to recur? Did the company adopt and ensure enforcement of new and more effective internal controls and procedures designed to prevent a recurrence of the misconduct? Did the company provide our staff with sufficient information for it to evaluate the company's measures to correct the situation and ensure that the conduct does not recur?		Pretrial agreement
Is the company the same company in which the misconduct occurred, or has it changed through a merger or bankruptcy reorganization?		Firm not in existence
	The adequacy of the prosecution of individuals responsible for the corporation's malfeasance and adequacy of remedies such as civil or regulatory enforcement actions (see USAM 9-28.1100).	Log[private settlements ($mm)] Log[other penalty ($mm)] Regulatory Sanction Index

Table 6

Determinants of federal prosecution of business organizations

This table reports the results of a probit regression of whether or not the firm was named as a respondent in a regulatory enforcement action for financial misrepresentation between 1978 and 2011. The dependent variable takes the value of one if the firm was named as a respondent and zero otherwise. This model is the selection model in the Heckman procedure used to estimate the monetary benefits of cooperation in financial misrepresentation enforcement actions. Variable definitions are presented in Appendix Table A-1. P-values are calculated using robust standard errors.

Criteria used by regulators	Proxy variable	Coefficient	P-value
Nature of misconduct	Fraud charges included	-0.1337	0.449
	Bribery charges included	0.5579	0.136
	Offering related	0.0186	0.882
	Insider trading	-0.2358	0.104
	Option backdating related	0.0327	0.930
	Merger related	-0.0045	0.983
	Self-dealing	-0.0665	0.677
	Misled auditors	-0.2433	0.056
	Big 8 auditor	-0.0750	0.617
How misconduct arose	Chm/CEO duality	0.1388	0.305
	Board size	**0.0671**	**0.007**
	Board independence	-0.1298	0.633
	Meet expectations	**0.4421**	**0.005**
	Inadequate internal controls	**0.6502**	**0.000**
	Going concern	**0.2912**	**0.028**
Pervasiveness of misconduct	Chm/Pres/CEO respondent	-0.0687	0.820
	# C-level respondents	0.1052	0.115
	# Employee respondents	**-0.1259**	**0.001**
	# Other respondents	0.0125	0.640
	# Violations	**0.0413**	**0.014**
History of misconduct	**Violation period (months)**	**0.0081**	**0.007**
	IPO related	-0.1669	0.443
	Reverse merger/development stage	0.2014	0.296
	Recidivist respondent	-0.0652	0.659
	Organized crime involved	0.0410	0.934
Size of harm	**Initial market reaction**	**0.7937**	**0.025**
	Stock run-up	0.0003	0.286
	Maximum loss	**0.5342**	**0.003**
	Announcement CAR	-0.0461	0.867
	Respondent ownership	**0.8673**	**0.008**
	Public float	0.6371	0.052
	Blockholder ownership	0.2811	0.313
Discovery and remedial actions	Self-reported violation	0.0438	0.747
	# Prior public announcements	**0.0588**	**0.050**
	Chm/Pres/CEO respondent terminated	0.0751	0.824
	% Executive respondents terminated	-0.1772	0.598
	% Respondents terminated	**-1.5228**	**0.000**
	Restated financial statements	-0.2331	0.150
	Conducted internal investigation	-0.2734	0.060
Cooperation	**Cooperation credit**	**0.6361**	**0.000**
	Impeded investigation	0.2475	0.485
	Response period (days)	-0.0002	0.058
Firm status	**Firm not in existence**[1]	**-0.6732**	**0.000**
Alternative remediation	Log[private settlements ($mm)]	0.0050	0.575
	Log[other penalty ($mm)]	**-0.1790**	**0.005**
	Regulatory Sanction Index	0.0044	0.544
Control variables	Log[market cap ($mm)]	0.0388	0.229
	Market-to-book ratio	-0.0001	0.069
	Enforcement action completed	**0.3862**	**0.026**
	Post-Remedies Act	**-0.3434**	**0.038**
	Post-cooperation initiative	-0.2004	0.187
	Constant	-0.3696	0.497
	N	1,059	
	Pseudo R^2	0.3186	
	Log likelihood	-376.78	
	χ^2	352.28	0.000

1. Used for identification in the selection equation.

Table 7

Criteria used in determining penalties

This table presents the SEC's framework for the consideration of the propriety of corporate penalties released on January 4, 2006 (http://www.sec.gov/news/press/2006-4.htm) and the relevant sections of Chapter 8 – Sentencing of Organizations from the DOJ's 2011 Federal Sentencing Guidelines Manual (http://www.ussc.gov/guidelines/2011_Guidelines/Manual_HTML/Chapter_8.htm). The determinants of the base fine are selected so that, in conjunction with the multipliers derived from the culpability score in §8C2.5 (Culpability Score), they will result in guideline fine ranges appropriate to deter organizational criminal conduct and to provide incentives for organizations to maintain internal mechanisms for preventing, detecting, and reporting criminal conduct. In order to deter organizations from seeking to obtain financial reward through criminal conduct, this section provides that, when greatest, pecuniary gain to the organization is used to determine the base fine. In order to ensure that organizations will seek to prevent losses intentionally, knowingly, or recklessly caused by their agents, this section provides that, when greatest, pecuniary loss is used to determine the base fine in such circumstances. Column 3 outlines the proxy variables (defined in Appendix Table A-1) used in the outcome equation estimating the magnitude of monetary penalties.

Securities and Exchange Commission	Federal Sentencing Guidelines Manual	Proxy variables
The presence or absence of a direct benefit to the corporation as a result of the violation.	§8C2.4. (a)(2) The pecuniary gain to the organization from the offense.	Stock run-up Self-dealing Bribery charges included Pretrial agreement
The degree to which the penalty will recompense or further harm injured shareholders.	§8C2.8. (a)(3) Any collateral consequences of conviction, including civil obligations arising from the organization's conduct. §8C2.9. Disgorgement. The court shall add to the fine any gain to the organization from the offense that has not and will not be paid as restitution or by way of other remedial measures.	Log[Private settlements ($mm)] Log[Other penalty ($mm)] Blockholder ownership Respondent ownership Public float Announcement CAR
The extent of the injury to innocent parties.	§8C2.4. (a)(2) The pecuniary loss from the offense caused by the organization. §8C2.8. (a)(4) Any non-pecuniary loss caused or threatened by the offense.	Initial market reaction Maximum loss Violation period (months) Response period (days)
The need to deter the particular type of offense.	§8C2.8. (a)(1) The need for the sentence to reflect the seriousness of the offense, promote respect for the law, provide just punishment, afford adequate deterrence, and protect the public from further crimes of the organization.	Option backdating related Insider trading Offering related Merger related IPO related Reverse merger/development stage
Whether complicity in the violation is widespread throughout the corporation.	§8C2.5. (b) Involvement in or Tolerance of Criminal Activity. §8C2.8. (a)(2) The organization's role in the offense.	Chm/Pres/CEO respondent # C-level respondents # Employee respondents # Other respondents # Violations
The level of intent on the part of the perpetrators.	§8C2.3. Offense Level.	Fraud charges included Misled auditors Meet expectations Inadequate internal controls Regulatory Sanction Index

Table 7 (con't)

Criteria used in determining penalties

Securities and Exchange Commission	Federal Sentencing Guidelines Manual	Proxy variables
The degree of difficulty in detecting the particular type of offense.		Self-reported violation Big 8 auditor Going concern
Presence or lack of remedial steps by the corporation.		Chm/Pres/CEO respondent terminated % Executive respondents terminated % Respondents terminated # Prior public announcements Conducted internal investigation Restated financial statements
Extent of cooperation with Commission and other law enforcement.	§8C2.5.(g) Self-Reporting, Cooperation, and Acceptance of Responsibility. §8C2.5.(e) Obstruction of Justice.	Cooperation credit Impeded investigation
Effective compliance programs.	§8C2.8. (a)(11) Whether the organization failed to have, at the time of the instant offense, an effective compliance and ethics program.	Chm/CEO duality Board size Board independence
Prior enforcement history.	§8C2.5. (c) Prior History. §8C2.5. (d) Violation of an Order. §8C2.8. (a)(6) Any prior criminal record of an individual within high-level personnel of the organization or high-level personnel of a unit of the organization who participated in, condoned, or was willfully ignorant of the criminal conduct. §8C2.8. (a)(7) Any prior civil or criminal misconduct by the organization.	Recidivist respondent Organized crime involved
Legislative history and statutory authority.		Post-Remedies Act Post-cooperation initiative

Table 8

Determinants of monetary penalties

This table reports the outcome equation of a Heckman maximum likelihood procedure predicting the logarithm of regulatory penalties in millions of dollars that are assessed against the firm for financial misrepresentation enforcement actions. The selection equation in Table 6 is used to account for selection bias caused by firms not being named in the enforcement action. Variable definitions are presented in Appendix Table A-1. P-values are calculated using robust standard errors.

Criteria used by regulators	Proxy variable	Coefficient	P-value
Direct benefit to firm	Stock run-up	-0.0000	0.632
	Self-dealing	**-0.2017**	**0.029**
	Bribery charges included	**0.4580**	**0.021**
	Pretrial agreement[1]	**1.5069**	**0.000**
Will penalty recompense or harm injured shareholders?	Log[Private settlements ($mm)]	-0.0066	0.315
	Log[Other penalty ($mm)]	0.1134	0.102
	Blockholder ownership	**-0.3814**	**0.013**
	Respondent ownership	0.0814	0.702
	Public float	-0.1188	0.488
	Announcement CAR	**0.3882**	**0.014**
The extent of injury to innocent parties	Initial market reaction	0.1087	0.644
	Maximum loss	**0.1844**	**0.041**
	Violation period (months)	**0.0045**	**0.003**
	Response period (days)	0.0001	0.097
Need to deter the particular type of offense	**Option backdating related**	**-0.9944**	**0.000**
	Insider trading	-0.1370	0.191
	Offering related	**0.1909**	**0.012**
	Merger related	0.0224	0.847
	IPO related	0.1351	0.134
	Reverse merger/development stage	0.0267	0.817
Pervasiveness of misconduct	Chm/Pres/CEO respondent	0.0929	0.516
	# C-level respondents	-0.0767	0.165
	# Employee respondents	0.0800	0.066
	# Other respondents	**-0.0418**	**0.046**
	# Violations	-0.0017	0.889
Intent of perpetrators	Fraud charges included	-0.0642	0.525
	Misled auditors	-0.0494	0.541
	Meet expectations	-0.0949	0.400
	Inadequate internal controls	-0.1465	0.224
	Regulatory Sanction Index	**0.0155**	**0.038**
Discovery and remedial actions	Self-reported violation	-0.0347	0.688
	Big 8 auditor	0.0331	0.664
	Going concern	-0.0714	0.228
	Chm/Pres/CEO respondent terminated	-0.3245	0.053
	% Executive respondents terminated	**0.4473**	**0.046**
	% Respondents terminated	0.2075	0.111
	# Prior public announcements	**0.0650**	**0.001**
	Restated financial statements	0.0284	0.774
	Conducted internal investigation	**-0.2116**	**0.031**
Cooperation	**Cooperation credit**	**-0.4259**	**0.000**
	Impeded investigation	0.2853	0.204
Effective compliance program	Cm/CEO duality	0.0287	0.730
	Board size	0.0122	0.383
	Board independence	-0.0618	0.709
History of misconduct	Recidivist respondent	0.1001	0.337
	Organized crime involved	-0.3616	0.099
Legislative history and statutory authority	Post-Remedies Act	0.1741	0.056
	Post-cooperation initiative	-0.0235	0.804
Control variables	**Log[market cap ($mm)]**	**0.1286**	**0.000**
	Market-to-book ratio	0.0000	0.807
	Enforcement action completed	**-0.4028**	**0.002**
	Constant	-0.1696	0.578
	rho	-0.5250	0.000
	sigma	0.9300	0.187
	lambda	-0.4883	
	N	1,059	
	Censored observations	229	
	χ^2	680.98	0.000
	Wald test of independent equations (rho = 0): $\chi^2(1)$	12.14	0.000

1. Used for identification in the outcome equation.

Table 9

Alternative estimates of the benefits of cooperation

This table summarizes the monetary benefits of cooperation estimated from the Heckman selection model using full maximum likelihood compared to Heckman's two-step efficient estimator (2-Step) and a Structural Equations Model (SEM) allowing for covariance between equation errors. Panel A presents the percentage decrease in monetary penalties for conducting an internal investigation and making the results available to regulators, being credited for cooperation by regulators in the enforcement action, and for doing both (estimated monetary penalties for doing neither is the denominator). Panel B presents the percentage increase in monetary penalties from the perspective of a firm choosing not to conduct an internal investigation, not to cooperate with regulators, and doing neither (estimated monetary penalties for doing both is the denominator).[1]

Panel A: Percent reduction in penalties for conducting an internal investigation and credited for cooperation

	Percent reduction in monetary penalties		
	Heckman full maximum likelihood	Heckman 2-step efficient estimator	Structural Equations Model
Internal investigation	-19.1%	-21.2%	-12.6%
Cooperation credit	-34.7%	-31.0%	-31.8%
Both	-47.1%	-45.6%	-40.4%

Panel B: Percent increase in penalties for *not* conducting an internal investigation *nor* credited for cooperation

	Percent increase in monetary penalties		
	Heckman full maximum likelihood	Heckman 2-step efficient estimator	Structural Equations Model
Internal investigation	23.6%	26.8%	14.4%
Cooperation credit	53.1%	45.0%	46.7%
Both	89.2%	83.9%	67.7%

1. Coefficient estimates using Heckman 2-step efficient estimator and Structural Equations Model are not presented but are available on request.

Table 10

Determinants of firm cooperation cited by regulators

This table reports a logistic regression of whether or not the firm was cited for cooperation by regulators. The dependent variable takes the value of one if the firm received cooperation credit in the enforcement action and zero otherwise. The independent variables are a proxy for various factors related to the enforcement actions for financial misrepresentation and are defined in Appendix Table A-1. Two-tailed p-values are calculated using robust standard errors.

Characteristics	Proxy variable	Coefficient	P-value
Firm characteristics	Log[market cap ($mm)]	0.1093	0.095
	Market-to-book ratio	**-0.1068**	**0.017**
	Going concern	-0.4897	0.103
	Reverse merger/development stage	-0.8862	0.098
	Firm not in existence	**-0.5372**	**0.012**
	Big 8 auditor	**0.9220**	**0.006**
Governance and ownership	Chm/CEO duality	-0.1733	0.412
	Board size	**-0.1165**	**0.003**
	Board independence	0.4413	0.373
	Respondent ownership	-0.2886	0.658
	Public float	-0.2321	0.690
	Blockholder ownership	0.0459	0.929
Nature of violation	**Bribery charges included**	**2.4215**	**0.000**
	Fraud charges included	**-0.6893**	**0.025**
	Offering related	-0.2031	0.414
	Insider trading	-0.0594	0.841
	Option backdating related	0.2660	0.600
	IPO related	0.4765	0.323
	Merger related	-0.6222	0.099
	Self-dealing	0.0164	0.961
	Misled auditors	0.1001	0.675
	Inadequate internal controls	**1.0446**	**0.004**
	Meet expectations	**0.5763**	**0.017**
Culpable parties	Chm/Pres/CEO respondent	-0.8003	0.073
	# C-level respondents	-0.0128	0.928
	# Employee respondents	-0.1362	0.096
	# Other respondents	-0.0024	0.956
	Recidivist respondent	-0.1352	0.631
	Organized crime involved	-1.1605	0.204
	# Violations	0.0150	0.630
	Log[other penalty ($mm)]	-0.1769	0.176
	Regulatory Sanction Index	0.0292	0.080
Size of harm	Violation period (months)	0.0032	0.460
	Initial market reaction	-0.1945	0.771
	Stock run-up	0.0006	0.138
	Maximum loss	0.1730	0.543
	Announcement CAR	-0.1772	0.688
Firm response	Self-reported violation	0.1655	0.558
	Conducted internal investigation	0.1604	0.502
	# Prior public announcements	0.0539	0.213
	Enforcement action completed	-0.2565	0.326
	Chm/Pres/CEO respondent terminated	0.7774	0.199
	% Executive respondents terminated	-0.7900	0.379
	% Respondents terminated	-0.2519	0.438
	Restated financial statements	0.2220	0.441
	Response period (days)	**-0.0005**	**0.031**
	Log[private settlements ($mm)]	-0.0082	0.592
Legal mandates	**Post-Remedies Act**	**1.8632**	**0.000**
	Post-cooperation initiative	-0.0030	0.991
	Constant	-3.3341	0.000
	N	1,059	
	Pseudo R^2	0.3713	
	Log likelihood	-392.06	
	χ^2	229.91	0.000

Table A-1

Variable definitions

This table defines the variables used in our analyses. An "x" under the appropriate table number indicates its use as an independent variable, while an "o" indicates its use as a dependent variable, and a "+" indicates its use as an identification variable. See Karpoff, Lee, and Martin (2008a, 2008b, 2012b) for details on how each of the variables are constructed.

Table					
4	6	8	10	Variable	Definition
	x	x	x	Announcement CAR	Cumulative compound abnormal returns of all public announcements related to the enforcement action using the value-weight return of all stocks as the benchmark.
x	x	x	x	Big 8 auditor	Dummy variable set to 1 if the firm's auditor was one of the *Big 8* auditing firms and 0 otherwise.
x	x	x	x	Blockholder ownership	The percentage of outstanding shares owned by blockholders.
x	x	x	x	Board independence	The percentage of the board of directors considered independent during the violation period.
	x	x	x	Board size	The number of individuals on the board of directors during the violation period.
x	x	x	x	Bribery charges included	Dummy variable set to 1 if the enforcement action included bribery allegations under the Foreign Corrupt Practices Act and 0 otherwise.
	x	x	x	# C-level respondents	The total number of chief-level executives employed by the firm and named as respondents in the enforcement action.
x	x	x	x	Chm/Pres/CEO respondent	Dummy variable set to 1 if a top executive with the title of Chairman, President, or CEO was named as a respondent and 0 otherwise.
	x	x	x	Chm/Pres/CEO respondent terminated	Dummy variable set to 1 if a top executive with the title of Chairman, President, or CEO was named as a respondent and was terminated by the firm and 0 otherwise.
x	x	x	x	Chm/CEO duality	Dummy variable set to 1 if the CEO was also chairman of the board of directors during the violation period and 0 otherwise.
	x	x	x	Conducted internal investigation	Dummy variable set to 1 if the firm announced they conducted an internal investigation related to the enforcement action and 0 otherwise.
o	x	x	o	Cooperation credit	Dummy variable set to 1 if the firm was given credit for cooperating with authorities in documents filed in the regulatory proceedings and 0 otherwise.
	x	x	x	# Employee respondents	Total number of non-executive respondents directly employed by the firm.
	x	x	x	Enforcement action completed	Dummy variable set to 1 if the regulatory enforcement action has been completed and 0 otherwise.
	x	x	x	% Executive respondents terminated	The proportion of executive respondents that were terminated by the firm.
	o			Firm named	Dummy variable set to 1 if the firm was named as a respondent in the enforcement action and 0 otherwise.
x	x	+	x	Firm not in existence	Dummy variable set to 1 if the firm was no longer in existence when the first regulatory proceeding was filed and 0 otherwise.
x		o		Firm penalty ($mm)	[Natural logarithm] Sum of fines plus disgorgement and interest in millions of dollars assessed on the firm in regulatory actions.
x	x	x	x	Fraud charges included	Dummy variable set to 1 if the violations included fraud charges under either the Securities or Exchange Acts and 0 otherwise.
x	x	x	x	Going concern	Dummy variable set to 1 if the firm received a going concern qualification during the violation period and 0 otherwise.
	x	x		Impeded investigation	Dummy variable set to 1 if the firm asserted Fifth Amendment rights, did not waive attorney/client privilege or otherwise impeded the investigation by regulatory authorities and 0 otherwise.
	x	x	x	Inadequate internal controls	Dummy variable set to 1 if the charges included 15 U.S.C. § 78m(b)(2)(B) and 0 otherwise.
	x	x	x	Initial market reaction	The abnormal return on the date of the initial public announcement related to the enforcement action using the value-weight return of all stocks as the benchmark.
x				Insider ownership	The percentage of outstanding shares owned by firm insiders (= 1 – public float).
	x	x	x	Insider trading	Dummy variable set to 1 if the enforcement action included insider trading violations and 0 otherwise.
	x	x	x	IPO related	Dummy variable set to 1 if the violation was related to the firm's initial public offering and 0 otherwise.

Table A-1 (con't)

Variable definitions

Table 4	6	8	10	Variable	Definition
x	x	x	x	Market cap ($mm)	[Natural logarithm] Market value of equity in millions of dollars.
x	x	x	x	Market-to-book ratio	Market value of equity plus total assets minus common equity divided by total assets.
x	x	x	x	Maximum loss	Abnormal loss an investor would experience that purchased the firm's stock at its highest point during the violation period and sold at the close following the first public announcement related to the enforcement action less the return on a valuated index of all stocks.
x	x	x	x	Meet expectations	Dummy variable set to 1 if the violation was motivated by internal or external expectations as to sales or earnings targets and 0 otherwise.
	x	x	x	Merger related	Dummy variable set to 1 if the violation occurred while the firm was involved in a merger and 0 otherwise.
	x	x	x	Misled auditors	Dummy variable set to 1 if one of the charges in the enforcement action included 17 C.F.R 240.13b2-2 and 0 otherwise.
	x	x	x	Offering related	Dummy variable set to 1 if the enforcement action included charges related to the offering of securities and 0 otherwise.
	x	x	x	Option backdating related	Dummy variable set to 1 if the violation was related to stock option backdating and 0 otherwise.
	x	x	x	Organized crime involved	Dummy variable set to 1 if a respondent in the enforcement action was associated with organized crime and 0 otherwise.
x	x	x	x	Other penalty ($mm)	[Natural logarithm] Sum of fines plus disgorgement and interest in millions of dollars assessed on individuals and agents in regulatory actions.
	x	x	x	# Other respondents	Total number of other respondents named in the enforcement action excluding the firm and its employees.
	x	x	x	Post-cooperation initiative	Dummy variable set to 1 if the first regulatory action occurred following the release by the SEC of the Relationship of Cooperation to Agency Enforcement Decisions on October 23, 2001 and 0 otherwise.
	x	x	x	Post-Remedies Act	Dummy variable set to 1 if the first regulatory action occurred following the passage of the Securities Enforcement Remedies and Penny Stock Reform Act "Remedies Act" on October 15, 1990 and 0 otherwise.
	+	x		Pretrial agreement	Dummy variable set to 1 if the firm entered into either a Deferred Prosecution Agreement or Non-Prosecution Agreement with regulators and 0 otherwise (contingent on cooperation).
	x	x	x	# Prior public announcements	The total number of public announcements made by the firm regarding the occurrence, investigation, related litigation, restatement, and enforcement prior to the first filing or public release by regulators in the enforcement action.
x	x	x	x	Private settlements ($mm)	[Natural logarithm] Total value of private class action settlements against the firm in millions of dollars net of recoveries in derivative actions.
	x	x	x	Public float	Proportion of the firm's stock not owned by insiders (= 1 – insider ownership).
x	x	x	x	Recidivist respondent	Dummy variable set to 1 if any of the named respondents were named in a previous regulatory enforcement action and 0 otherwise.
	x	x	x	Regulatory Sanction Index	Total number of non-monetary sanctions against all respondents as developed by Karpoff, Lee, and Martin (2012b).
x	x	x	x	Respondent ownership	Proportion of the firm's outstanding shares owned by the respondents named in the enforcement action.
	x	x	x	% Respondents terminated	The proportion of employee respondents that were terminated by the firm.
	x	x	x	Response period (days)	Number of days between the end of the violation and the first public announcement by the firm or regulators related to the enforcement action.
x	x	x	x	Restated financial statements	Dummy variable set to 1 if the firm restated its financial statements covering the violation period and 0 otherwise.
	x	x	x	Reverse merger/development stage	Dummy variable set to 1 if the firm either went public via a reverse merge or was a development stage company during the violation period and 0 otherwise.
	x	x	x	Self-dealing	Dummy variable set to 1 if the violation included embezzlement, theft, or unauthorized use or transfer of assets to one of the named respondents.
	x	x	x	Self-reported violation	Dummy variable set to 1if the firm self-reported the violation to regulatory authorities and 0 otherwise.
x	x	x	x	Stock run-up	Abnormal return from the beginning of the violation period to the point of the highest market capitalization during the violation period using the value-weight return of all stocks as the benchmark.
x	x	x	x	Violation period (months)	Number of months in the violation period.
	x	x	x	# Violations	The total number of unique US Code and Code of Federal Regulation rules charged against all respondents in the enforcement action.

(All figures to be reproduced in color on the Web and in black-and-white in print)

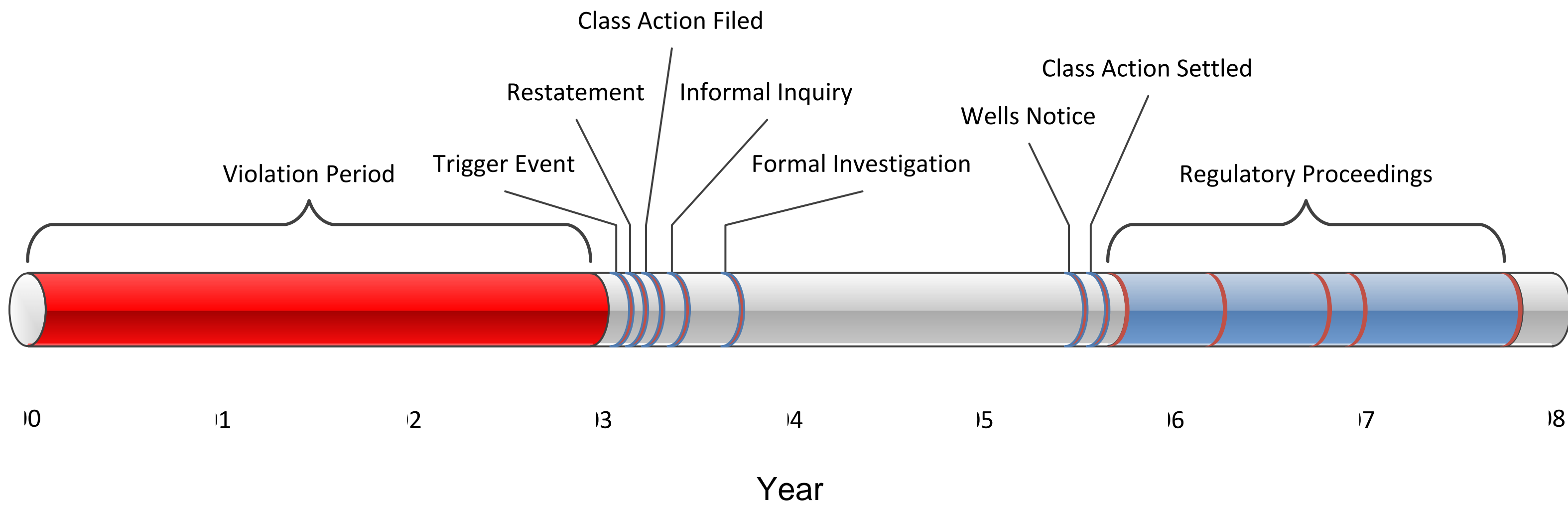
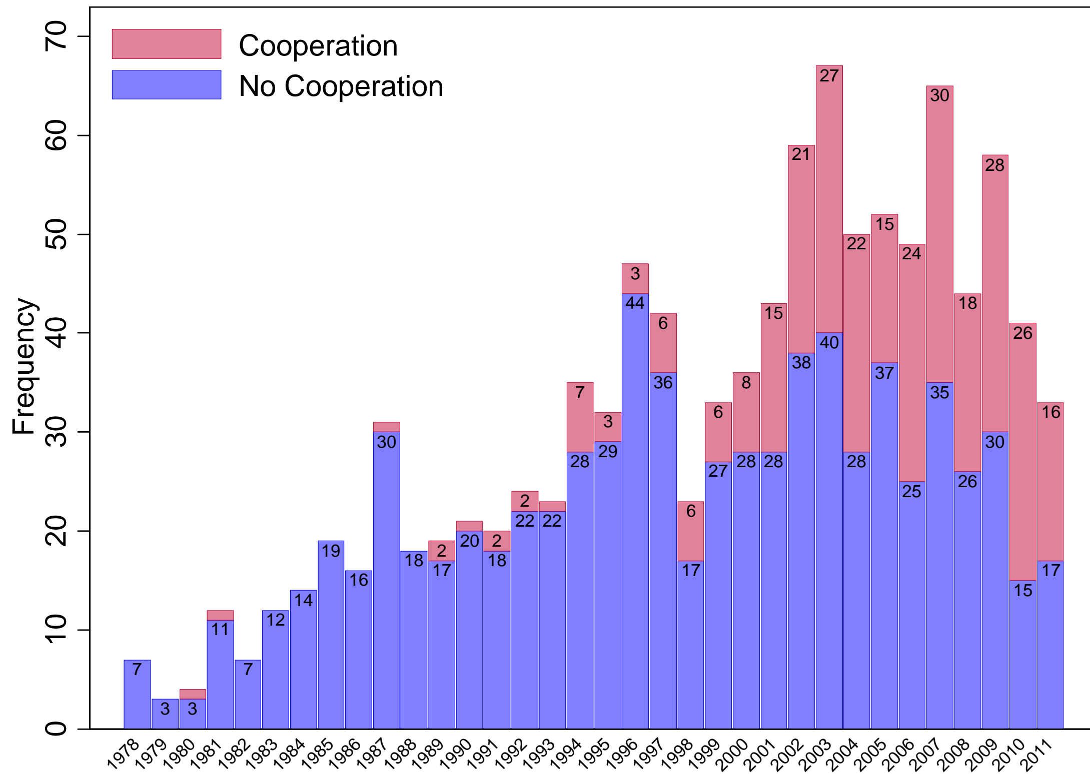


Figure 1. Timeline of an enforcement action and related events.



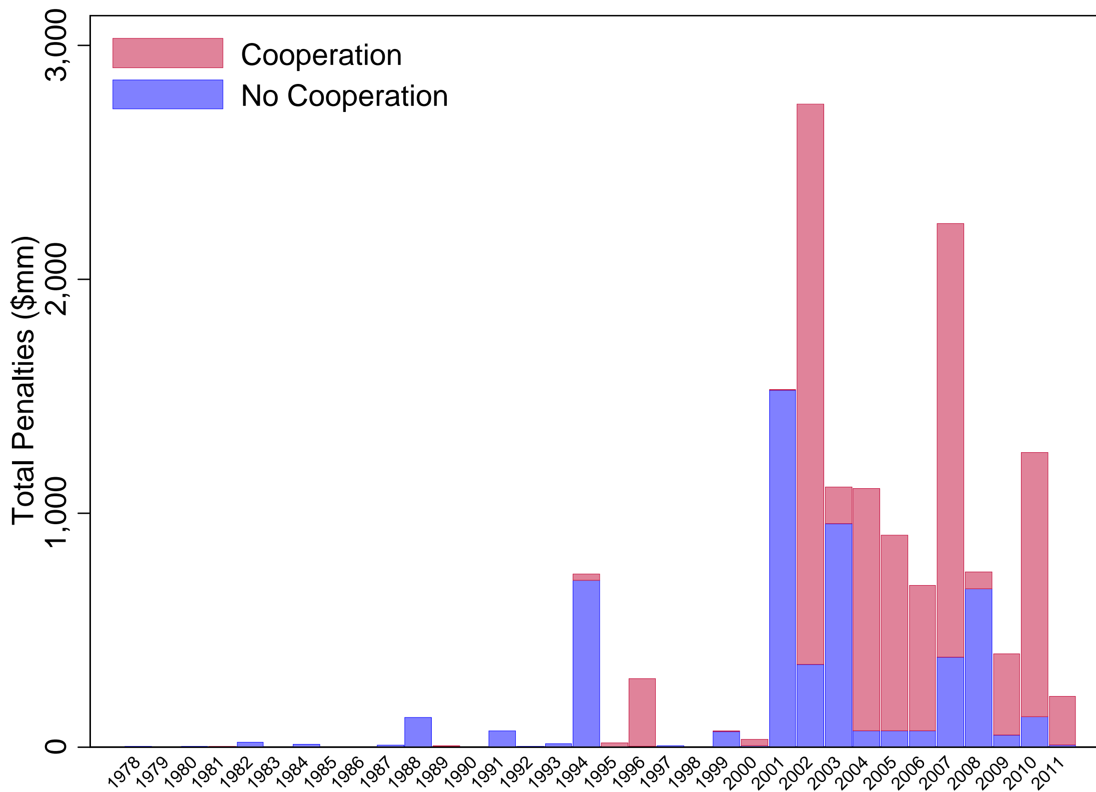


Figure 2. Cooperation and monetary penalties in financial misrepresentation enforcement actions from 1978-2011.