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Out of Site, Out of Mind? The Role of the Government-Appointed Corporate Monitor

LINDSEY A. GALLO,* KENDALL V. LYNCH,* AND RIMMY E. TOMY†

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ABSTRACT

We study the role of a relatively new type of external firm monitor, an on-site government-appointed Corporate Monitor, and assess whether such appointments reduce firms' propensity to violate laws. Using a sample of deferred and nonprosecution agreements, we first document the determinants

*Stephen M. Ross School of Business, University of Michigan; †The University of Chicago Booth School of Business

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of Monitor appointment. We find firms that voluntarily disclose wrongdoing and have more independent directors are less likely to have Corporate Monitors, whereas those with more severe infractions, mandated board changes, and increased cooperation requirements are more likely to have Monitors. We find such appointments are associated with an 18%–25% reduction in violations while the Monitor is on site, however, the effect does not persist after the Monitorship ends. Using a semisupervised machine learning method to measure changes in firms' ethics and compliance norms, we find that the reduction in violations is associated with changes in ethics and compliance that also do not persist. Finally, we document that firms under Monitorship experience a persistent reduction in innovation, highlighting a previously unexplored cost of these interventions. Overall, our results suggest that, although Corporate Monitors on site are associated with fewer violations, firms revert to previous levels of violations following Monitors' departure.

JEL codes: G30, G34, G38, K14, K22, K40, M14, M40, M41, M48

Keywords: corporate governance; corporate culture; corporate monitor; corporate recidivism; enforcement; ethical norms; regulation

1. Introduction

Regulators use a variety of tools to deter and remedy corporate misconduct in areas such as financial or tax fraud, insider trading, and environmental or safety violations. Recent literature has studied, in various settings, the effectiveness of these tools, including whistleblower programs (Call et al. [2018], Soltes [2020], Dey et al. [2021], Berger and Lee [2022]), the disclosure of regulatory actions (Duro et al. [2019], Kleymenova and Tomy [2022]), mandated firm disclosures (Christensen et al. [2017]), and enforcement or prosecution (Correia [2014], Silvers [2016], Nguyen [2021]). We study a relatively new tool at the disposal of regulators in preventing corporate misconduct: a government-appointed, on-site corporate compliance monitor, also referred to as the "Corporate Monitor."[1] Monitors are appointed at large corporations that have already been exposed for wrongdoing, with the aim of reforming the firm and preventing further misconduct. However, given their relative novelty, less is known about their role or effectiveness. In this paper, we examine whether the appointment of a Corporate Monitor reduces the incidence of repeat misconduct.

By studying the impact of these Monitors, we address a timely and unresolved debate in the area of corporate prosecution. The George W. Bush administration established guidelines regarding how federal prosecutors should select and implement Corporate Monitors, but stated they "should only be used where appropriate given the facts and circumstances of a particular matter" (Morford [2008]). The use of Corporate Monitors was more widespread under the Obama administration, with a third of all prosecu-

[1] Throughout the paper, we capitalize Corporate Monitor to distinguish from other types of monitors.

tion agreements requiring them. However, although the Trump administration pulled back on the practice, citing the burden on corporations, the Department of Justice (DOJ) has recently reestablished its commitment to using Corporate Monitors, calling them "an effective means of reducing the risk of repeat misconduct" (Monaco [2021]). Given this seemingly ad hoc approach by successive administrations, whether Corporate Monitors have helped reduce corporate recidivism is an important and timely question and may aid the DOJ in considering Monitor imposition going forward.

We study Corporate Monitors within the setting of deferred or nonprosecution agreements (hereafter, N/DPAs), which are contracts between the offending firm and enforcement agencies in which the firm agrees to remedies and sanctions in exchange for not being prosecuted.[2] The federal government maintains the right to prosecute later if the firm fails to uphold the agreement. Prosecuting large corporations that break laws can lead to negative externalities that affect stakeholders, such as employees, pension funds, or minority investors, who may not be directly responsible for the corporate misconduct. Therefore, prosecutors may decide to prioritize reformation over retribution and enter into N/DPAs. Often the agreements mandate firms to hire a government-appointed Corporate Monitor, who is tasked with investigating the compliance failure that resulted in the violation, assessing its scope to provide adequate compensation to affected parties, and providing recommendations to prevent future violations (Root [2014], Arlen and Kahan [2017]).[3]

It is unclear whether government-appointed Corporate Monitors would help prevent misconduct. The N/DPA generally outlines the compliance measures that the firm must undertake; as long as the firm is motivated to avoid future violations and any N/DPA violations, the Monitor may not be incrementally effective. Corporate Monitors are also frequently former prosecutors who may not have the firm-specific knowledge required to improve governance. On the other hand, because Corporate Monitors are outsiders, they may also be less prone to capture by the management. Additionally, they may be particularly well versed in compliance issues. Given the tradeoff between insider knowledge and objectivity, whether these outside Monitors help prevent violations at a firm that engaged in wrongdoing is uncertain.

Furthermore, the appointment of Corporate Monitors imposes additional costs on the firm. Not only are Corporate Monitors and their teams

[2] As part of the N/DPA, the firm typically must admit responsibility and agree to a statement of facts that can be used against it in the case of noncompliance, making conviction (if pursued) highly likely (Arlen and Kahan [2017]).

[3] Corporate Monitors are also used, albeit to a lesser extent, as part of plea agreements. We limit our analyses to N/DPAs, given the relative frequency with which these agreements use Corporate Monitors (Alexander and Cohen [2015]). Prosecutors generally use plea agreements and N/DPAs to extract different concessions, with the latter used more often to achieve governance changes (Alexander and Cohen [2015]). Furthermore, limiting our sample to N/DPAs allows us to restrict unobserved variation in the Monitor and non-Monitor firms, which improves the precision of our difference-in-differences estimates.

compensated by the firm, but they have also been accused of interfering too much with firms' internal functioning.[4] Firms also run the risk of the Monitor uncovering new, unrelated violations that can lead to further penalties.[5] These factors may have the unintended consequence of making firms more risk averse and less innovative. Moreover, reports produced by Corporate Monitors are rarely made public, due to concerns regarding trade secrets. Therefore, investors and other outside stakeholders have little insight into Monitors' activities and findings. Considering the costs of engaging Corporate Monitors, and the lack of transparency around them, understanding whether they succeed at overseeing compliance and reducing misconduct is particularly significant.

To explore the role of Corporate Monitors and study whether their appointment reduces corporate recidivism, we collect comprehensive data related to 193 deferred and nonprosecution agreements between the DOJ and publicly listed firms over the period 2001 to 2019. A third of these agreements require the firm to engage a Corporate Monitor. We begin by assessing the factors that lead to an agreement requiring a Corporate Monitor. Our findings suggest that features of the N/DPA are associated with the imposition of a Monitor. Specifically, we find that firms that voluntarily disclose wrongdoing are less likely to have Corporate Monitors, whereas those with more severe infractions, mandated board changes, and increased cooperation requirements are more likely to have Monitors. We also find that firms with more independent directors at the time of the N/DPA are less likely to be required to appoint a Corporate Monitor. Other firm characteristics, such as size, leverage, and profitability, do not significantly predict Monitor-appointment, suggesting that firms with and without Monitors are similar as N/DPAs are usually offered to larger corporations.

Next, we use a difference-in-differences design to determine if appointing a Corporate Monitor is linked with future law violations. Our measure of violations incorporates data across a comprehensive set of violations, including accounting, antitrust, banking, medical, employment-related, environmental, export control, fraud, investor protection, kickbacks/bribery, and Foreign Corrupt Practices Act (FCPA) violations.[6] We aim to assess

[4] For example, a 2009 investigation by the Government Accountability Office (GAO) found that corporations expressed concerns about Monitors' cost and scope as well as how to resolve disputes with them (U.S. GAO [2009]). Consistent with the DOJ being sensitive to these concerns, in a recent memo, then-Assistant Attorney General Benczkowski instructed DOJ prosecutors to be more selective in appointing Monitors and highlighted the costs to companies of imposing Corporate Monitors, specifically mentioning that the scope of the Monitor should be focused and limited (Benczkowski [2018]). Also see "U.S. to Reduce Use of Monitors in Corporate Settlements," *The Wall Street Journal*, October 15, 2018.

[5] See, for example, "N.Y. Financial Watchdog Fines Standard Chartered $300 Million," *The Wall Street Journal*, August 20, 2014.

[6] Examining all future violations, rather than only those related to the initial infraction, is consistent with how the DOJ intends to measure repeat offenders going forward. Specifically, the Deputy Attorney General recently released a memo instructing their attorneys to consider

whether Monitor-firms perform differently regarding violations while the Monitor is on site compared to after their departure. A decrease in violations during the Monitor's tenure and an increase after they leave would make it easier to attribute the change to the Monitor's presence, but imply that those changes are temporary. A decrease in violations during the Monitor's tenure, with no increase after they leave suggests a permanent change, but it is less clear if the Monitor's presence was the main driver. Our findings are consistent with the former—that is, N/DPA firms with Corporate Monitors commit 18%–25% fewer violations relative to N/DPA firms that are not required to appoint Corporate Monitors, but only while the Monitor is on site. The average firm in our sample engages in 46 violations over our sample period, making the decline economically significant. These magnitudes suggest that N/DPA firms assigned a Corporate Monitor commit 8 to 12 fewer violations relative to N/DPA firms that are not assigned a Monitor. However, violations increase to pre-N/DPA levels following the Monitors' departure. We do not find significant differences in violations between Monitor and non-Monitor firms prior to the N/DPA, supporting the reasonability of the parallel trends assumption that underlies our difference-in-differences specification.

A key concern in this setting is that differences in features of the N/DPA or other unobservable factors, rather than the Monitor, could drive the decline in violations. We next conduct additional analyses to mitigate this concern. First, we match Monitor and non-Monitor firms on observable firm- and agreement-specific characteristics, including the compliance requirements in the N/DPA and the governance environment at the firm at the time of the N/DPA. We use multiple matching techniques including coarsened exact matching (CEM) and entropy balancing (Hainmueller [2012], Iacus et al. [2012]). Additionally, we match Monitor and non-Monitor firms on the textual content of the N/DPA (Mozer et al. [2020]). As these agreements include particular instructions for the manager, such as making specific operational changes, matching the text of the N/DPA could identify additional dimensions of oversight. If the compliance mandates are identical for both Monitor and non-Monitor firms, the contrast in violations could be attributable to differences in implementation, which is within the scope of the Monitor's duties. Our results are robust to these alternative matching techniques.

Second, we examine variation in violations after matching on preexisting levels of integrity, which captures aspects of a more detrimental corporate culture that could generate violations. Employing a measure of integrity developed using machine learning and a corpus of earnings transcripts (Li et al. [2021]), we find that our inferences continue to hold. Third, we conduct sensitivity tests and find that selection on unobservable factors is unlikely to significantly bias our results (Altonji et al. [2005], Oster [2019]).

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all corporate misconduct, including civil and regulatory violations, when considering appropriate actions (Monaco [2021]).

Features of our setting are also consistent with the limited influence of unobservable factors. As discussed earlier, there is an ad hoc component to assigning Monitors, which is not based on firm and agreement characteristics but rather on the political leanings of the administration in office and prosecutors in charge of the enforcement case. Also, our prediction model suggests Monitor firms are similar to non-Monitor firms along several firm-specific characteristics, reducing concerns that unobserved firm-specific factors could be driving our results.

Next, we study the mechanism through which Monitors influence rule violations. In the Morford memorandum (Morford [2008]), the DOJ states that "A [M]onitor's primary role is to evaluate whether a corporation has both adopted and effectively implemented ethics and compliance programs to address and reduce the risk of recurrence of the corporation's misconduct." Based on this mandate, we examine changes in ethics and compliance standards at the offending firm by drawing on the corporate culture literature (Kotter and Heskett [1992], Weber et al. [1996], Guiso et al. [2015], Li et al. [2021], Graham et al. [2022]). Corporate culture comprises shared values and group behavior norms (Kotter and Heskett [1992]). Shared values pertain to the significant goals and concerns held by the majority within a group, whereas group behavior norms involve ways of behaving within a group. Shared values are invisible and more difficult to modify, whereas group behavior norms are visible and easier to change (Kotter and Heskett [1992]). Furthermore, unlike societal culture, corporate culture (specifically norms) can often change, especially based on major corporate events (Weber et al. [1996], Guiso et al. [2015], Graham et al. [2022]). Therefore, if a company receives an N/DPA or implements a Corporate Monitor, this may impact a facet of its culture, specifically the group behavior norms.

We use a semisupervised machine learning method on the unscripted portion of firms' earnings conference call transcripts to develop a measure of ethics and compliance norms for our sample firms (Li et al. [2021]). Because senior management influences prevailing group behavior norms, if they are committed to instituting changes in ethics and compliance norms, then such a commitment—real or purported—should percolate into their communications. Consistent with the reduction in violations, relative to non-Monitor firms, Monitor firms only experience an improvement in their ethics and compliance *during* the time the Monitor is on site—there is no long-term increase in our measures.

Next, we conduct a structural mediation analysis to test whether the Monitor has a direct effect on violations or if the effect is indirect and works through changing norms (MacKinnon et al. [2007], MacKinnon [2012]). Our results are consistent with the latter—there is only a significant indirect effect of the Monitor on violations through the Monitor's impact on ethics and compliance norms. Based on the direct effect, we do not find that Monitors affect violations through pathways other than ethics and compliance.

We conduct several additional analyses to provide more insight into the institution of Corporate Monitorship. First, we document details related to the background of Monitors, including their education, experience, and other Monitor and Monitorship-specific details. We find that Monitors who have prior experience in a similar role and those on site for a longer duration are associated with more lasting changes to ethics and compliance norms at the firm. Second, we provide details related to Monitors' direct and indirect costs. Based on estimates triangulated from various sources, the direct costs of Monitors account for approximately 2% of net income before extraordinary items. Although we find that Monitor firms do not restructure in response to the high direct costs, we do find evidence consistent with these firms experiencing a reduction in innovation, measured using patent filings and the market return to patent grants (Kogan et al. [2017]). These results highlight a potential indirect cost of being assigned a Monitor and might explain why managers pull back on their commitment to ethics and compliance following the Monitor's departure.

Finally, we explore an alternative explanation for our results of lower violations during the tenure of the Monitor: Regulators may be reluctant to bring additional charges against firms that have a Corporate Monitor on site, resulting in fewer violations. To test whether Monitor firms are subject to less scrutiny by regulators, we focus on the subset of firms subject to inspections by the Environmental Protection Agency (EPA). We find no evidence of a reduction in EPA inspections during the Monitor's tenure, relative to the control sample, suggesting that regulators are not necessarily paying less attention while the Monitor is on site. We also find that firms that receive Monitors are not significantly more likely to be engaged in parallel civil litigation (e.g., class-action lawsuits) or regulatory action (e.g., by the SEC) for the violation that led to the N/DPA. Taken together, these results do not support the alternative that firms with Monitors are less likely to be subject to regulatory scrutiny relative to non-Monitor firms.

Our study is subject to certain limitations. First, our sample consists of deferred and nonprosecution agreements entered into by publicly listed firms that are large and economically important. Our findings may not generalize to private companies. Second, our primary analyses consist of comparing outcomes for Monitor firms to similar non-Monitor firms, matched using various methods and along several dimensions. Additionally, we delineate the effect of the Monitor by relying on their primary mandate of implementing changes in ethics and compliance standards and relating such changes to law violations. We conduct several additional analyses and robustness tests to rule out alternative explanations and assess our results' sensitivity to unobservable factors. Nonetheless, there may be alternative mechanisms that could be driving our results. Also, even though we find that Monitors are not associated with violations through governance changes such as board changes or increased monitoring by senior management, there may be additional dimensions of oversight that we do not capture. Finally, although we provide some evidence of Monitors' costs and benefits,

we do not attempt to provide a complete cost-benefit analysis of Corporate Monitorship.

Our paper makes several contributions to the literature. First, we investigate a relatively understudied arrangement between regulators and offending firms and assess whether Corporate Monitors are effective in reforming repeat offenders. Our findings indicate that, although Corporate Monitors are associated with a reduction in violations during their tenure at the firm, they are less successful in producing lasting change and reducing criminal and civil violations in the long run. To our knowledge, our paper is the first to empirically investigate whether the mandate of a Corporate Monitor results in lower rates of future violations. In doing so, we contribute to a growing literature that studies the mechanisms regulators use to deter and remedy corporate misconduct (Correia [2014], Silvers [2016], Christensen et al. [2017], Call et al. [2018], Duro et al. [2019], Soltes [2020], Dey et al. [2021], Nguyen [2021], Berger and Lee [2022], Kleymenova and Tomy [2022]).

Second, we shed light on the mechanism by which the presence of Monitors reduces violations, which aligns with the DOJ's view on the role of the Monitor. Specifically, we show that the reduction of violations during the probationary period is related to improvements in ethics and compliance standards at the firm. However, once the Monitor leaves, these improvements do not persist, except in cases where the Monitor has similar prior experience or is on site for a longer duration. These findings can guide the DOJ in how to reduce corporate recidivism. On the one hand, our results suggest that Monitors *are* associated with significant improvements to group behavior norms related to ethics and compliance; however, they are largely ineffective at instituting lasting changes.

Third, our work adds to the nascent literature exploring the determinants and consequences of Corporate Monitors (Amiram et al. [2021], Files et al. [2022]). We provide novel insight into the factors that predict the appointment of Corporate Monitors (Khanna and Dickinson [2006], Root [2014]). We find that voluntary disclosure of the misconduct, the severity of the infraction, mandated board changes, increased cooperation by the firm, and the percentage of independent directors significantly predict Monitor appointment.

Finally, we contribute to a large literature that examines the effectiveness of external monitors (DeFond et al. [2002], Lang et al. [2004], Larcker and Richardson [2004], Bebchuk and Weisbach [2010], Soltes [2014], Vashishtha [2014], Bell et al. [2015], Boone and White [2015], Chen et al. [2015], Lehmann [2019]). Although independence from management allows the external monitor to remain objective, it also limits the amount of information and firm-specific knowledge the monitor can collect. This tradeoff between proximity and objectivity is seen as fundamental to the supervision and monitoring of firms (Boot and Macey [2003]). Although Corporate Monitors are compensated by the firm, they are appointed by a regulator and have wide authority to review and gather information about

the firm. Unlike other external overseers, such as auditors who are hired and retained by the firm at will, Corporate Monitors remain with the firm for a fixed duration, based upon an agreement with a regulator. Our research sheds light the effectiveness of this unique arrangement.

2. *Background*

The United States has a long history of prosecuting corporations. In a landmark 1909 case, *New York Central & Hudson River Railroad v. United States*, the U.S. Supreme Court ruled a corporation can not only be prosecuted but can also be held responsible for the actions of a single employee (Garrett [2014]). However, no official federal guidelines existed for when prosecutors should indict corporations, until Eric Holder, as U.S. deputy attorney general, issued a memorandum in 1999 titled, "Bringing Criminal Charges Against Corporations." It outlined eight principles that should be considered when determining whether to indict a corporation on criminal charges (Holder [1999]). These include (1) the nature and severity of the offense, (2) the pervasiveness of wrongdoing within the corporation, (3) history of similar conduct, (4) timely and voluntary disclosure, (5) the existence and adequacy of a corporate compliance program, (6) the corporation's remedial actions, (7) the collateral consequences, and (8) the adequacy of noncriminal remedies. In 2003, the Thompson Memo added a ninth criterion, namely waiver of client-attorney privilege (Thompson [2003]), and, in 2015, a 10th was added regarding whether liable individuals were held accountable (Yates [2015]). Other memos over the past two decades have outlined additional directives related to the prosecution of corporations.

Of the total number of law violations committed by corporations, about 86% are indicted.[7] In less than 1% of cases, the prosecutor declines legal action. In the remaining 13% of cases, prosecutors enter into a deferred or nonprosecution agreement with the firm.[8] Of the 86% of firms indicted, the most common outcome is a plea agreement (80.5%). Only 0.5% of cases face a trial conviction, whereas the remainder is dismissed (4.4%) or result in an acquittal (0.4%). Although plea agreements require acceptance by the judge overseeing the case and result in penalties, they are generally preferred to trial because they allow the firm to avoid the unpredictability and reputational damage of a trial (Meitl [2007], Kaal and Lacine [2014], Thomas [2019]). Accounting firm Arthur Andersen is a prominent

[7] These figures are sourced from the Corporate Prosecution Registry (CPR) and exclude Swiss Bank Program Agreements. The CPR can be accessed here: https://corporate-prosecution-registry.com/ (last accessed: December 23, 2022).

[8] Despite the low percentage of N/DPA outcomes relative to indictments, the sample of N/DPA actions is relevant because of the frequency with which large, public firms enter these agreements. Specifically, in the CPR, N/DPAs represent greater than 50% of the outcomes of publicly listed firms, and 20 of the Fortune 100 companies are in this sample.

example of the collateral damage of a trial. In the wake of the Enron scandal, it opted to go to trial instead of entering into a plea agreement, leading to clients deserting the firm and, ultimately, its demise.[9]

Because the terms of a plea agreement could be overly punitive, firms and prosecutors also have the option to enter into a deferred or nonprosecution agreement. These agreements are used when the collateral consequences of an indictment would cause "disproportionate harm to shareholders, pension holders, employees, and others not proven personally culpable" (The U.S. Justice Manual, §9-28.300).

Deferred and nonprosecution agreements are contractual agreements between a corporate wrongdoer and enforcement agencies, in which the corporation agrees to the imposition of certain sanctions in exchange for the government not prosecuting or deferring prosecution of the firm (Garrett [2007], Kaal and Lacine [2014], Arlen and Kahan [2017]). In nonprosecution agreements, no formal charges are filed, and therefore a federal judge does not have oversight of the agreement. In deferred prosecution agreements, charges are formally filed, and the federal judge overseeing the case can reject the terms of the agreement. However, in practice, federal judges tend not to do so, which makes deferred prosecution agreements similar to nonprosecution agreements (Garrett [2014], Kaal and Lacine [2014]). These agreements impose sanctions that include, among others, imposing penalties, changing the corporate compliance program, and appointing a Corporate Monitor.

The mandate of a Corporate Monitor is to rehabilitate the corporation so that it will not become a recidivist. Often prosecutors appoint Monitors when they do not trust in the firm's ability to remedy its issues without oversight (Garrett [2014]). However, a Monitor's powers can vary from serving in an advisory role to forcing significant compliance changes at the firm (Khanna and Dickinson [2006]). The Monitor also has an obligation to periodically report to the prosecutor (or other governmental body) overseeing the N/DPA. For example, the 2005 deferred prosecution agreement between the DOJ and Bristol-Myers Squibb (BMS), related to criminal charges that the company conspired to commit securities fraud, outlines the role of the Monitor, including his term and reporting requirements. The agreement gives the Monitor latitude "to require BMS to take any steps he believes are necessary to comply with the terms of [the DPA]." In this case, the Monitor was required to report quarterly to the DOJ, and senior management could only review the reports after they had been reviewed by the DOJ.[10]

Most Corporate Monitor reports are never made public or are heavily redacted if they are (Garrett [2014], Root [2014]). Being answerable only

[9] See, for example, "Justices Unanimously Overturn Conviction of Arthur Andersen," *The New York Times*, May 31, 2005.

[10] We provide an excerpt from the BMS deferred prosecution agreement in section 3 of the internet appendix.

to the body that imposes the sanctions provides Monitors with extraordinary leverage to recommend any further compliance changes, with the DOJ generally agreeing with them (Coffee [2005], Root [2014]). Having a Corporate Monitor also opens the firm to "scope creep" or a potential expansion of the Monitor's compliance efforts. For example, the CEO of BMS was terminated after the Monitor uncovered unrelated antitrust violations (Resnik and Dougall [2006]). BMS pleaded guilty to making false statements to the government while negotiating its deferred prosecution agreement.[11]

About a third of deferred and nonprosecution agreements since 2001 have required the retention of Corporate Monitors. Although the use of Corporate Monitors grew in popularity following the Thompson Memo in 2003, their role was better defined in the 2008 Morford memo, titled "Selection and Use of Monitors in Deferred Prosecution Agreements and Non-Prosecution Agreements with Corporations" (Morford [2008]). The Morford memo provided guidelines on how to structure the requirements of a Corporate Monitor within the context of N/DPAs, emphasizing their primary role is to propose, evaluate, and monitor a corporation's ethics and compliance program. However, the Morford memo was less clear about when Monitors should be imposed.

In light of how frequently Corporate Monitors have been imposed and the objections related to them, in 2018, then-U.S. Assistant Attorney General Benczkowski issued a memo titled, "Selection of Monitors in Criminal Division Matters." Among other comments regarding the use of Monitors, the memo listed more specific considerations for when to impose Monitors and noted that "the imposition of a [M]onitor will not be necessary in many corporate criminal resolutions, and the scope of any [M]onitorship should be appropriately tailored to address the specific issues and concerns that created the need for the [M]onitor" (Benczkowski [2018]).

The Benczkowski memo establishes that fewer Monitors should be imposed going forward, and, for those imposed, their scopes should be well defined. More recently, Deputy Attorney General Lisa Monaco issued two memos pertaining to the use and scopes of Corporate Monitors (Monaco [2021], [2022]). To some degree, these memos reverse the implications of the Benczkowski memo regarding how frequently Monitors should be used. Instead, these memos make it clear that Corporate Monitors will be considered for all firms and imposed on a case-by-case basis. Further, the memos give additional guidelines for prosecutors that go beyond the Morford memo for how to structure Monitorships. These instructions for prosecutors were informed by the Corporate Crime Advisory Group created by Deputy Attorney General Monaco in 2021 and reflect the learnings of experienced prosecutors throughout the DOJ and experienced attorneys at

[11] See "Bristol-Myers Squibb Announces Agreement in Principle to Resolve Federal Antitrust Investigation," *Press Release*, May 10, 2007.

other executive agencies. However, to our knowledge, no study has directly examined the effectiveness of Corporate Monitors. Most conclusions about Monitors are anecdotal or theoretical, and thus our study contributes to a greater understanding of the efficacy of Corporate Monitors.

3. Data and Sample

3.1 DATA ON CORPORATE MONITORS, N/DPAS, AND FIRM CHARACTERISTICS

We source our sample of deferred and nonprosecution agreements from the CPR, a comprehensive database of U.S. federal prosecutions and deferred and nonprosecution agreements (Garrett and Ashley [2017]). The CPR data are collected using several sources, which include federal docket sheets, press releases, prosecutors' offices, and FOIA requests.[12] Data on corporate governance variables are sourced from the Institutional Shareholder Services (ISS), ExecuComp, and BoardEx. For firms where these date are not available from ISS, ExecuComp, and BoardEx, we hand-collect the missing data from SEC filings using forms DEF 14A, 10-K, and 20-F. Conference call transcripts are from Factset. Finally, data on firm-level characteristics are sourced from Compustat.

We restrict our sample to N/DPAs with public corporations listed in the United States and their subsidiaries and require that the firm be publicly listed in the year of the N/DPA. If separate N/DPAs for the same infraction exist with a parent company and its wholly owned subsidiary, we consider this observation to be a single N/DPA for the parent. Because data on our outcome measure (rule violations by firms) are available only from 2000 onward, we restrict our sample of N/DPAs to 2000–19. No publicly listed companies entered into an N/DPA in the year 2000. Therefore, our final sample consists of 193 N/DPAs during the years 2001–19.

For each of these N/DPAs, we obtain the primary agreement document from the CPR or DOJ's Web site. We collect information on the infraction period, the date of the agreement, whether the agreement required the appointment of a Corporate Monitor, its penalties, its probation period, and details related to the offense. In addition, we collect variables that capture compliance and corporate governance requirements stipulated by the N/DPA agreement.[13] Finally, we classify the agreements into 14 violation-type categories.

We match our sample of 193 N/DPA-firms to a Global Company Key (GVKEY) in Compustat. Because a nontrivial number of firms in our sample undertake mergers and acquisitions during our sample period, we trace

[12] We thank Brandon Garrett and Jon Ashley for sharing the CPR data. For further details, please see https://corporate-prosecution-registry.com/ (last accessed: December 23, 2022).

[13] We thank Wulf Kaal and Timothy Lacine for generously sharing their data on N/DPA requirements for 2000–13. We extend their data set to 2019 based on the primary N/DPA documents.

each firm through time and match it with its surviving GVKEY.[14] This step is important because N/DPAs stipulate that changes in corporate organization do not absolve the company from compliance, and the acquiring parent can still be held responsible if the terms of the agreement are not upheld.[15]

Figure 1 presents a plot of the time trend of N/DPAs between the DOJ and publicly traded companies from 2001 to 2019, highlighting the portion of observations characterized by the assignment of a Corporate Monitor. Panel A of table 1 presents the descriptive statistics for our sample of N/DPA firms by Fama-French 12-industry groups. Of the 193 observations, 59 (31%) are assigned a Corporate Monitor. Firms in finance represent the largest portion of our sample (25.39%), with healthcare, medical equipment, and drugs representing the next-largest contingent (19.17%). These two industries also have the largest shares of Corporate Monitors (18.64% and 22.03%, respectively). Panel B of table 1 presents the descriptive statistics for our sample of N/DPA firms by type of violation. FCPA violations are the most common type (34.72%), and FCPA-related N/DPAs contain the most Corporate Monitors (27 of 59 total).

Table 2, panel A, presents descriptive statistics for the sample. We categorize the variables by whether they represent preagreement measures, N/DPA requirements, or firm characteristics and other variables. In terms of measures undertaken prior to the N/DPA, 80.3% of the firms engaged in remedial measures, and in 47.7% of the cases, the firm voluntarily disclosed the wrongdoing to the DOJ. Panel A also shows the agreement-specific requirements. On average, an N/DPA is in effect for 30 months, and there is high variation in the penalties associated with the N/DPA, with a mean (median) penalty of $95 million ($17 million). Other significant activities required as part of the N/DPA include mandated board changes (51% of the cases); additional oversight responsibilities for senior management (46% of the cases); additional monitoring obligations by the board of directors (58% of the cases); setting up an improved compliance program (82% of the cases); and some form of a waiver of the entity's rights (95% of cases); and accounting-specific obligations regarding internal controls or accounting methods (43% of cases).

Panel B of table 2 presents the means of the predictor variables for N/DPAs that require Corporate Monitors (treated) and those that do

[14] Forty-one firms in our sample pursue M&As in our sample period.

[15] In an October 2021 memo, Deputy Attorney General Monaco instructs prosecutors as follows when considering firm misconduct: "To that end, when making determinations about criminal charges and resolutions for a corporate target, prosecutors are directed to consider all misconduct by the corporation discovered during any prior domestic or foreign criminal, civil, or regulatory enforcement actions against it, including any such actions against the target company's parent, divisions, affiliates, subsidiaries, and other entities within the corporate family. Some prior instances of misconduct may ultimately prove less significant, but prosecutors must start from the position that all prior misconduct is potentially relevant" (Monaco [2021]).

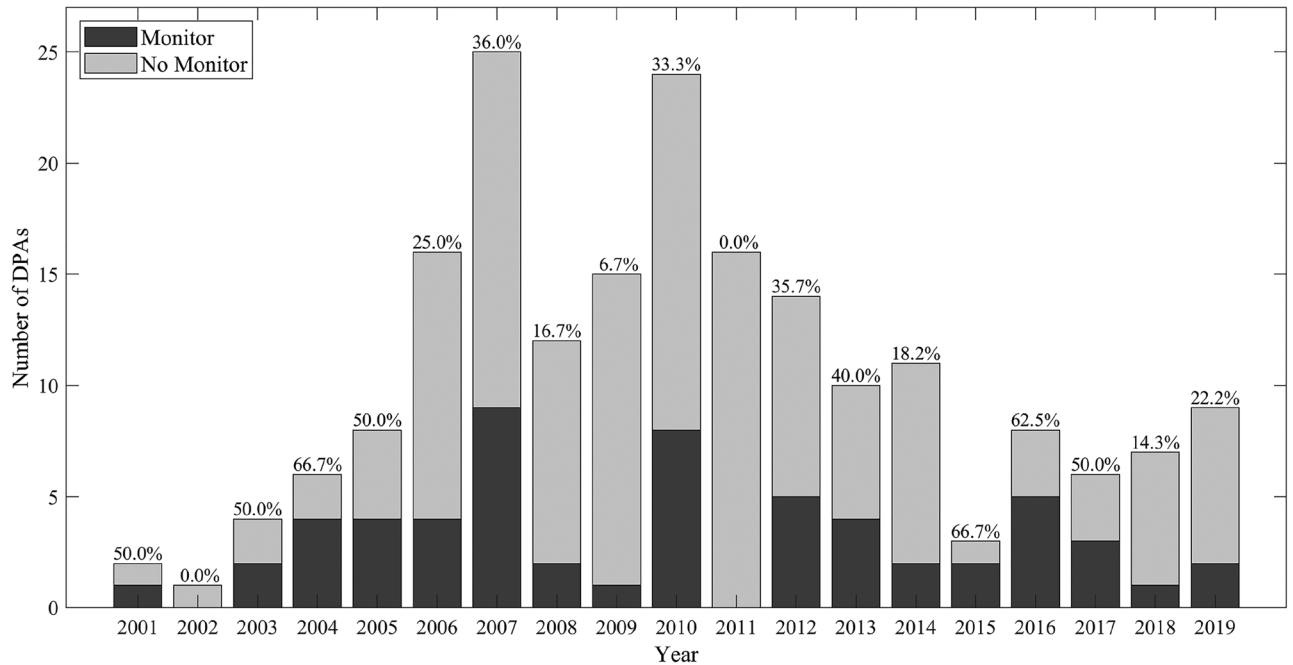

FIG 1.—Time trend of N/DPAs and corporate monitor assignment. This figure depicts the time trend of N/DPAs and shows the percentage of N/DPAs that required the appointment of a Corporate Monitor.

TABLE 1
Corporate Monitors Breakdown

Panel A: Corporate Monitors by industry

Industry	*N*	% of Sample	Monitors	% of Monitors
Consumer Nondurables	9	4.66	2	3.39
Consumer Durables	4	2.07	3	5.08
Manufacturing	15	7.77	6	10.17
Oil, Gas, Coal	19	9.84	6	10.17
Chemicals	4	2.07	2	3.39
Business Equipment	17	8.81	6	10.17
Telephone and Television Transmission	6	3.11	2	3.39
Utilities	5	2.59	0	0.00
Wholesale, Retail, Services	15	7.77	4	6.78
Healthcare, Medical Equip., Drugs	37	19.17	13	22.03
Finance	49	25.39	11	18.64
Other	13	6.74	4	6.78
Total	193		59	

Panel B: Corporate Monitors by violation type

Violation Type	*N*	% of Sample	Monitors	% of Monitors
Accounting	6	3.11	3	5.08
Antitrust	6	3.11	1	1.69
Banking	15	7.77	4	6.78
Drug or medical	20	10.36	2	3.39
Employment related	5	2.59	0	0.00
Environmental	2	1.04	0	0.00
Export Control	8	4.15	2	3.39
FCPA	67	34.72	27	45.76
Fraud	23	11.92	7	11.86
Investor Protection	18	9.33	3	5.08
Kickbacks/bribery	15	7.77	8	13.56
Misc	8	4.15	2	3.39
Total	193		59	

This table shows the number of Corporate Monitors by Fama-French 12-industry groups (panel A) and by violation type (panel B) for the sample of deferred and nonprosecution agreements from 2001–19, in the year of the agreement. Please see appendix A for a description of the violation types.

not (control). Panel B also includes two-sample *t*-tests of the differences in means. Firms with Monitors demonstrate significantly more personnel changes in the wake of the misconduct (37.3% of firms with a Monitor have personnel changes versus 24.6% for firms without one). Treated firms are also required to pay a higher penalty, relative to control firms, suggesting that worse infractions invite the appointment of a Monitor.[16] Furthermore, violations of the FCPA regulation are more likely to be associated with engaging a Corporate Monitor.

[16] The distribution of these payments is highly skewed. Therefore, we use payment deciles in our estimations. The mean of treated firms falls in the sixth decile, whereas the mean of control firms falls in the fifth decile.

TABLE 2
Descriptive Statistics

Panel A: Descriptive statistics for predictor and control variables

	N (N/DPAs)	Mean	St. Dev	Median	Q1	Q3
Preagreement measures						
Remedial Measures	193	0.803	0.399	1.000	1.000	1.000
Employee Changes	193	0.285	0.453	0.000	0.000	1.000
Voluntary Disclosure	193	0.477	0.501	0.000	0.000	1.000
N/DPA requirements						
Monitor	193	0.306	0.462	0.000	0.000	1.000
Probation length	193	30.028	13.578	28.091	24.000	36.000
Total payment ($M)	193	95.327	220.652	17.262	2.220	67.648
FCPA	193	0.347	0.477	0.000	0.000	1.000
Prior Violations of Same Type	193	0.207	0.406	0.000	0.000	0.000
Board Changes	193	0.513	0.501	1.000	0.000	1.000
Business Changes	193	0.254	0.436	0.000	0.000	1.000
Compliance Program	193	0.819	0.386	1.000	1.000	1.000
Cooperation	193	0.948	0.222	1.000	1.000	1.000
Board Monitoring	193	0.575	0.496	1.000	0.000	1.000
Senior Management	193	0.456	0.499	0.000	0.000	1.000
Waive Rights	193	0.948	0.222	1.000	1.000	1.000
Accounting Mandate	193	0.430	0.496	0.000	0.000	1.000

(*Continued*)

TABLE 2—*(Continued)*

Panel A: Descriptive statistics for predictor and control variables

	N (N/DPAs)	Mean	St. Dev	Median	Q1	Q3
Firm characteristics & other variables						
Size_{t-1}	175	9.808	2.596	9.927	8.229	11.434
Leverage_{t-1}	175	0.243	0.169	0.214	0.128	0.349
$\text{Return on Assets}_{t-1}$	175	0.022	0.122	0.019	0.001	0.074
$\text{Change in Intangibles}_{t-1}$	175	0.019	0.147	0.010	−0.018	0.047
$\text{Market-to-Book Ratio}_{t-1}$	175	2.543	2.588	2.035	1.212	3.261
$\text{Employee Variability}_{t-1}$	175	0.166	0.148	0.115	0.057	0.228
USA-based	193	0.762	0.427	1.000	1.000	1.000
% Independent Directors	185	0.793	0.179	0.867	0.727	0.909
CEO is Chairman	185	0.492	0.501	0.000	0.000	1.000
New CEO	185	0.595	0.492	1.000	0.000	1.000

(*Continued*)

TABLE 2—*(Continued)*

Panel B: Descriptive statistics for predictor and control variables, by Corporate Monitor assignment

	Treated			Control			Total *N*	Difference	*t*-stat
	N (N/DPAs)	Mean	St. Dev	*N* (N/DPAs)	Mean	St. Dev		in Means	
Pre-agreement measures									
Remedial Measures	59	0.830	0.378	134	0.791	0.408	193	0.039	0.633
Employee Changes	59	0.373	0.488	134	0.246	0.432	193	0.127*	1.801
Voluntary Disclosure	59	0.458	0.502	134	0.485	0.502	193	(0.027)	(0.350)
N/DPA Requirements									
Probation length	59	31.017	9.659	134	29.592	14.995	193	1.425	0.671
Total Payment Decile	59	0.606	0.324	134	0.460	0.306	193	0.146***	3.004
FCPA	59	0.458	0.502	134	0.299	0.459	193	0.159**	2.154
Prior Violations of Same Type	59	0.170	0.378	134	0.224	0.418	193	(0.054)	(0.856)
Board Changes	59	0.780	0.418	134	0.396	0.491	193	0.384***	5.232
Business Changes	59	0.271	0.448	134	0.246	0.432	193	0.025	0.365
Compliance Program	59	0.966	0.183	134	0.754	0.432	193	0.212***	3.628
Cooperation	59	0.983	0.130	134	0.933	0.251	193	0.050	1.450
Board Monitoring	59	0.728	0.448	134	0.507	0.502	193	0.221***	2.914
Senior Management	59	0.628	0.488	134	0.381	0.487	193	0.247***	3.237
Waive Rights	59	0.983	0.130	134	0.933	0.251	193	0.050	1.450
Accounting Mandate	59	0.627	0.488	134	0.343	0.477	193	0.284***	3.785

(*Continued*)

TABLE 2—*(Continued)*

Panel B: Descriptive statistics for predictor and control variables, by Corporate Monitor assignment

	Treated			Control			Total *N*	Difference	*t*-stat
	N (N/DPAs)	Mean	St. Dev	*N* (N/DPAs)	Mean	St. Dev		in Means	
Firm characteristics & other variables									
Size_{t-1}	55	9.882	2.242	120	9.774	2.752	175	0.108	0.254
Leverage_{t-1}	55	0.247	0.166	120	0.242	0.170	175	0.006	0.211
$\text{Return on Assets}_{t-1}$	55	0.032	0.114	120	0.017	0.125	175	0.015	0.764
$\text{Change in Intangibles}_{t-1}$	55	0.018	0.163	120	0.019	0.140	175	(0.001)	(0.024)
$\text{Market-to-Book Ratio}_{t-1}$	55	2.731	2.304	120	2.457	2.714	175	0.274	0.648
$\text{Employee Variability}_{t-1}$	55	0.146	0.135	120	0.174	0.154	175	(0.028)	(1.174)
USA-based	59	0.678	0.471	134	0.799	0.403	193	(0.121)*	(1.817)
% Independent Directors	59	0.744	0.226	126	0.816	0.147	185	(0.072)**	(2.596)
CEO is Chairman	59	0.458	0.502	126	0.508	0.502	185	(0.050)	(0.635)
New CEO	59	0.610	0.492	126	0.587	0.494	185	0.023	0.294

This table presents characteristics for our sample of N/DPAs from 2001–19. Firm characteristics and other variables are measured in the year prior to the N/DPA year. Panel A presents the descriptive statistics for the full sample, whereas panel B presents the descriptive statistics by Corporate Monitor assignment. Differences in characteristics are tested using two-sample *t*-tests of the difference in means. Variable definitions are provided in appendix B. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

Finally, the appointment of a Corporate Monitor is also associated with other required governance changes specified in the N/DPA agreement. For example, treated firms are more likely to have mandated board changes, be required to set up or improve a compliance program, have additional monitoring by the board, have additional oversight responsibilities for the senior management, and change their financial reporting practices. We match treated and control firms on these observable differences in our empirical tests.

3.2 CORPORATE VIOLATIONS DATA

We source data on corporate violations from the Good Jobs First (hereafter, GJF) Violation Tracker database. GJF is a nonprofit organization whose goal is to "promote corporate and government accountability in economic development." Its Violation Tracker database accumulates data on corporate violations from 47 federal regulatory and enforcement agencies, including the DOJ, the Federal Deposit Insurance Corporation, and the EPA. The database covers cases of corporate misconduct that result in penalties across several categories, such as banking, consumer protection, employment protection, environment-related misconduct, price fixing, bribery, and others. For each agency covered, the data are complete from 2000.

We merge the corporate violations data with our sample of deferred and nonprosecution agreements. We drop Alpha Natural Resources from our sample of N/DPAs, as this firm is an outlier with 3,840 violations. The median firm in our sample has 20 violations for the same period. Because the GJF database accumulates violations by the current parent company, we manually search the data to identify firms that received the N/DPA prior to when the current parent acquired them. Firms that enter into N/DPAs tend to be large and have multiple subsidiaries and pursue many mergers and acquisitions. As such, we hold the parent company responsible for violations by its subsidiaries, which is consistent with the approach taken by the SEC and DOJ Criminal Division, which have stated that "a parent may be liable for its subsidiary's conduct under traditional agency principles."[17] Specifically, if the N/DPA firm acquires another firm, we attribute violations by the target firm after acquisition to the N/DPA firm. If the N/DPA firm is acquired, we attribute violations by the parent company after the date of acquisition to the N/DPA firm. However, we do not include any violations by unrelated subsidiaries of the new parent company. Finally, we also account for the case in which the N/DPA firm acquires a firm that is

[17] See *A Resource Guide to the U.S. Foreign Corrupt Practices Act*, available here: https://www.sec.gov/spotlight/fcpa/fcpa-resource-guide.pdf (last accessed: December 23, 2022).

a serial violator by including the preacquisition violations of the acquired subsidiary.[18]

Using a description from GJF, we classify these violations into 14 categories. These include violations of accounting rules, antitrust regulations, banking and consumer protection laws, drug- or medical-related rules, economic sanctions, employment laws, environmental laws, export control rules, FCPA, fraud, and investor protection laws. There are also categories for kickbacks and bribery and a residual category we call miscellaneous. Appendix A describes these categories and provides the list of agencies involved in overseeing the firm and issuing penalties for the violations. Figure 2 presents a plot of the time trend of violations by type for 2000–19. The figure shows that employment- and environmental-related violations comprise the largest share of violations in our sample over time.

In table 3, we present additional descriptive statistics related to the violation data. Our sample contains 8,820 violations from 2000 to 2019. Firms in our sample have multiple violations of the same type. For example, there are a total of 66 accounting-related violations but only 45 N/DPA-firms with this type of violation, indicating that, conditional on violating, the average firm in our sample violates accounting rules 1.467 times. Consistent with figure 2, employment- and environmental-related violations form the largest share of our sample, at 36.98% and 25.26% of total violations, respectively. The other violations that comprise a high percentage of total violations include banking (7.28%), investor protection (5.56%), fraud (4.66%), consumer protection (4.24%), and FCPA (2.18%). In addition, the miscellaneous category accounts for 7.59% of all cases.[19] The table also shows the mean and median number of violations per firm. The average firm violates environmental laws 23 times and employment-related laws 21 times. Combining all violation types, the mean number of violations is 46, indicating firms violate multiple laws during our sample period.

4. Determinants of the Decision to Appoint a Corporate Monitor

We begin our analyses by assessing the factors that drive the appointment of Corporate Monitors within the sample of deferred and nonprosecution agreements. Specifically, we estimate variations of the following linear probability model:

$$Pr(Monitor = 1|X)_i = \beta_0 + \eta_v + \gamma_t + \lambda_{ind} + \beta_k X_i + \epsilon_i \,, \tag{1}$$

where i indexes the firm subject to the N/DPA. $Monitor$ is an indicator variable that takes the value of 1 if the N/DPA requires a Corporate Monitor

[18] This measure of violations is consistent with Deputy Attorney General Monaco's direction to DOJ prosecutors noted in footnote 15. Nonetheless, our results are robust if we only include violations of the firm and its subsidiaries of record as of the N/DPA date.

[19] Please see appendix A for a description of the miscellaneous category and respective overseeing agencies.

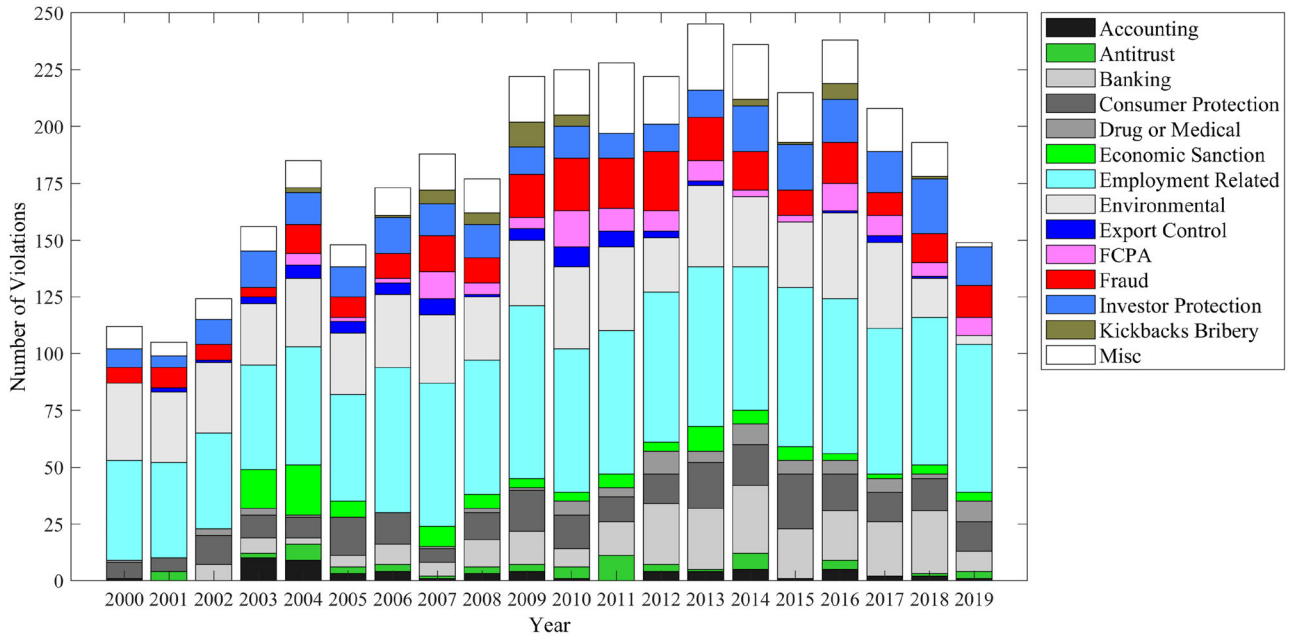

FIG 2.—Time trend of violations by type of violation. This figure depicts the time trend of total violations by type of violation. Please see appendix A for a description of the violation types.

TABLE 3

Number of Violations by Type, Full Sample

Violation Type	Total Number of Violations	% of Sample	Number of Firms with Violations	Number of Violations per Firm			
				Mean	Median	St. Dev	Maximum
Accounting	66	0.75%	45	1.467	1.000	0.944	4
Antitrust	80	0.91%	37	2.162	2.000	0.986	4
Banking	642	7.28%	48	13.375	7.500	13.324	42
Consumer protection	374	4.24%	79	4.734	2.000	5.826	39
Drug or medical	106	1.20%	24	4.417	2.000	5.516	27
Economic sanction	163	1.85%	52	3.135	2.000	2.426	9
Employment related	3,262	36.98%	154	21.182	8.500	36.854	256
Environmental	2,228	25.26%	99	22.505	6.000	71.218	497
Export control	88	1.00%	33	2.667	1.000	3.388	13
FCPA	192	2.18%	95	2.021	2.000	0.850	4
Fraud	411	4.66%	97	4.237	2.000	5.379	31
Investor protection	490	5.56%	53	9.245	3.000	10.711	39
Kickbacks/bribery	49	0.56%	29	1.690	1.000	0.850	4
Misc	669	7.59%	89	7.517	2.000	14.390	97
Total (All types)	8,820			45.938	20.000		

This table shows the total number of violations and violations per firm, by type of violation, from 2000 to 2019 for the firms in our sample of deferred and nonprosecution agreements. Please see appendix A for a description of the violation types.

and 0 otherwise. β_0 is the constant term, η_v represents violation-type fixed effects, γ_t represents N/DPA-year fixed effects, and λ_{ind} is industry fixed effects. X is a vector of k predictors, and ϵ is the error term. We include predictors from three categories: characteristics of the N/DPA, variables related to governance of the firm, and other firm-specific characteristics. We provide detailed definitions of variables in appendix B.

Table 4 presents results from the estimation of equation (1).[20] Panel A presents the results using only variables related to the agreement and includes the total payment required by the settlement (including fines, restitution, and disgorgement), and an indicator for whether the firm had a prior violation of the same type. We also include variables that capture compliance and corporate governance changes that were required as part of the N/DPA (e.g., *Board Changes*, *Cooperation*) as well as indicators for factors cited in the N/DPA as reasons for deferring prosecution. These indicators capture whether remedial actions were taken by the firm, whether there were personnel changes initiated by the firm ahead of the N/DPA, and the firm's involvement in the investigation of wrongdoing. Column 1 of panel A does not include any fixed effects. Columns 2, 4, and 6 include N/DPA violation fixed effects, whereas columns 3–6 include year fixed effects. Finally, columns 5 and 6 present the estimates with industry fixed effects. Based on our univariate results, firms with FCPA violations are more likely to have Corporate Monitors. Therefore, specifications without violation fixed effects include an *FCPA Indicator* variable.

We find that four agreement-specific variables are significantly associated with the appointment of a Monitor across specifications. First, voluntary disclosure by the firm, that is, if the firm voluntarily discloses its wrongdoing to the DOJ or another enforcement agency or investigates and reveals its misconduct, reduces the probability of having a Monitor by 18.3%–22.0%. We also find that *Total Payment Decile* is positive and significant across specifications, consistent with Monitors being required for more severe misconduct.[21] Moving from the lowest to the highest decile of *Total Payment Decile* increases the likelihood of being assigned a Monitor by 33.2%–42.1%. N/DPA firms with mandated board changes are also more likely to be assigned a Corporate Monitor. Finally, N/DPAs require the company's cooperation, including the admission of responsibility; providing documents, testimony, access to facilities and employees; and the disclosure of activities to the government. We find that firms facing increased cooperation requirements are also more likely to be assigned a Corporate Monitor. The models in panel A have significant explanatory power for identifying Monitor firms, with adjusted R^2 values ranging from 16.7% to 27.8%.

[20] We present the results using linear probability models for ease of interpretation. However, our results are robust to estimation using logit models (untabulated).

[21] The U.S. Sentencing Guidelines tend to impose more significant fines, depending on the severity of the violation. For details, see https://www.ussc.gov/guidelines/2018-guidelines-manual (last accessed: December 24, 2022).

TABLE 4

Impact of N/DPA, Corporate Governance, and Firm Variables on the Likelihood of a Corporate Monitor Appointment

Panel A: Estimates from a model predicting Monitor appointment

	Monitor (1)	Monitor (2)	Monitor (3)	Monitor (4)	Monitor (5)	Monitor (6)
Remedial Measures	−0.019	0.009	0.035	0.072	0.067	0.078
	(−0.223)	(0.102)	(0.396)	(0.799)	(0.733)	(0.799)
Employee Changes	0.055	0.036	−0.034	−0.068	−0.030	−0.057
	(0.710)	(0.460)	(−0.433)	(−0.835)	(−0.383)	(−0.692)
Voluntary Disclosure	−0.205***	−0.213***	−0.192***	−0.194**	−0.222***	−0.219***
	(−2.763)	(−2.795)	(−2.631)	(−2.520)	(−2.955)	(−2.684)
Probation Length	−0.000	0.001	−0.001	−0.001	−0.003	−0.003
	(−0.159)	(0.236)	(−0.581)	(−0.284)	(−1.127)	(−0.732)
Total Payment Decile	0.351***	0.374***	0.329***	0.341***	0.398***	0.421***
	(3.321)	(3.506)	(2.862)	(2.898)	(3.305)	(3.376)
FCPA Indicator	0.068		0.078		0.097	
	(0.636)		(0.675)		(0.833)	
Prior Violations of Same Type	−0.103	−0.056	−0.085	−0.040	−0.047	−0.016
	(−1.362)	(−0.624)	(−1.041)	(−0.416)	(−0.550)	(−0.162)
Board Changes	0.282***	0.267***	0.253**	0.222**	0.259**	0.224**
	(2.882)	(2.689)	(2.387)	(2.194)	(2.267)	(2.005)
Cooperation	0.148	0.157	0.324***	0.360***	0.328***	0.353***
	(1.500)	(1.492)	(3.001)	(3.169)	(2.651)	(2.738)
Business Changes	0.094	0.103	0.093	0.100	0.109	0.120
	(1.238)	(1.329)	(1.265)	(1.381)	(1.454)	(1.550)
Compliance Program	0.135*	0.117	0.163*	0.124	0.129	0.090
	(1.743)	(1.161)	(1.840)	(1.196)	(1.471)	(0.862)
Board Monitoring	−0.038	−0.039	−0.073	−0.042	−0.057	−0.023
	(−0.411)	(−0.393)	(−0.787)	(−0.451)	(−0.603)	(−0.232)
Senior Management	−0.031	−0.058	0.081	0.049	0.042	0.028
	(−0.284)	(−0.517)	(0.740)	(0.459)	(0.357)	(0.242)

(*Continued*)

TABLE 4—*(Continued)*

Panel A: Estimates from a model predicting Monitor appointment

	Monitor (1)	Monitor (2)	Monitor (3)	Monitor (4)	Monitor (5)	Monitor (6)
Waive Rights	0.064	0.040	0.026	0.053	−0.009	−0.001
	(0.527)	(0.318)	(0.220)	(0.398)	(−0.078)	(−0.006)
Accounting Mandate	0.097	0.081	0.070	0.098	0.088	0.109
	(0.784)	(0.599)	(0.516)	(0.796)	(0.655)	(0.825)
USA-based	−0.066	−0.042	−0.087	−0.062	−0.101	−0.076
	(−0.777)	(−0.468)	(−1.046)	(−0.719)	(−1.214)	(−0.865)
Observations	193	193	193	193	193	193
Adjusted R^2	0.180	0.168	0.258	0.283	0.266	0.272
Violation FE	No	Yes	No	Yes	No	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	Yes	Yes

(*Continued*)

TABLE 4—*(Continued)*

Panel B: Estimates from a model predicting monitorship, including corporate governance predictors

	Monitor (1)	Monitor (2)	Monitor (3)	Monitor (4)	Monitor (5)	Monitor (6)	Monitor (7)
Voluntary Disclosure		−0.206***	−0.237***	−0.203***	−0.230***	−0.237***	−0.259***
		(−2.677)	(−2.985)	(−2.657)	(−2.722)	(−2.976)	(−2.879)
Total Payment Decile		0.350***	0.402***	0.349***	0.369***	0.400***	0.430***
		(3.281)	(3.766)	(2.998)	(3.066)	(3.203)	(3.370)
Board Changes		0.278***	0.260**	0.232**	0.207*	0.246**	0.215*
		(2.724)	(2.473)	(2.096)	(1.923)	(2.050)	(1.806)
Cooperation		0.199*	0.227**	0.359***	0.417***	0.355***	0.399***
		(1.801)	(2.202)	(3.069)	(3.573)	(2.751)	(3.110)
Business Changes		0.125	0.111	0.126*	0.124	0.134*	0.132
		(1.604)	(1.455)	(1.657)	(1.641)	(1.682)	(1.597)
Compliance Program		0.137*	0.124	0.169*	0.133	0.134	0.096
		(1.754)	(1.237)	(1.848)	(1.257)	(1.468)	(0.896)
% Independent Directors	−0.520***	−0.492***	−0.559***	−0.534***	−0.550***	−0.431**	−0.469**
	(−2.651)	(−2.994)	(−3.452)	(−2.897)	(−3.081)	(−2.200)	(−2.501)
CEO is Chairman	−0.023	0.044	0.042	0.005	0.012	0.009	0.015
	(−0.318)	(0.612)	(0.562)	(0.076)	(0.162)	(0.123)	(0.202)
New CEO	0.055	0.015	0.019	0.013	0.021	0.050	0.042
	(0.748)	(0.212)	(0.266)	(0.195)	(0.312)	(0.713)	(0.596)
Observations	185	185	185	185	185	185	185
Adjusted R^2	0.081	0.203	0.215	0.271	0.306	0.262	0.280
N/DPA Predictors	No	Yes	Yes	Yes	Yes	Yes	Yes
Violation FE	No	No	Yes	No	Yes	No	Yes
Year FE	Yes	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	Yes	Yes

(*Continued*)

TABLE 4—*(Continued)*

Panel C: Estimates from a model predicting monitorship, including corporate governance and firm predictors

	Monitor (1)	Monitor (2)	Monitor (3)	Monitor (4)	Monitor (5)	Monitor (6)	Monitor (7)
Voluntary Disclosure		−0.198**	−0.222**	−0.188**	−0.203**	−0.227***	−0.238**
		(−2.448)	(−2.580)	(−2.263)	(−2.179)	(−2.619)	(−2.382)
Probation Length		−0.001	0.001	−0.004	−0.003	−0.005*	−0.004
		(−0.493)	(0.312)	(−1.553)	(−0.754)	(−1.796)	(−1.026)
Total Payment Decile		0.416***	0.426***	0.466***	0.464***	0.508***	0.514***
		(3.207)	(3.249)	(3.505)	(3.239)	(3.539)	(3.345)
Board Changes		0.278**	0.265**	0.227*	0.202*	0.227*	0.206
		(2.555)	(2.332)	(1.902)	(1.740)	(1.779)	(1.624)
Cooperation		0.252**	0.240*	0.441***	0.447***	0.461***	0.436***
		(2.321)	(1.788)	(3.308)	(2.930)	(3.205)	(2.666)
Compliance Program		0.166*	0.164	0.222**	0.211*	0.198*	0.184
		(1.838)	(1.455)	(2.095)	(1.784)	(1.811)	(1.491)
$Size_{t-1}$	−0.000	−0.008	−0.002	−0.016	−0.015	−0.009	−0.008
	(−0.024)	(−0.434)	(−0.075)	(−0.882)	(−0.734)	(−0.456)	(−0.350)
$Leverage_{t-1}$	−0.113	0.219	0.355*	0.130	0.219	0.083	0.173
	(−0.564)	(1.199)	(1.769)	(0.664)	(1.035)	(0.428)	(0.802)
Return on $Assets_{t-1}$	0.170	0.188	0.208	0.103	0.165	0.086	0.175
	(0.480)	(0.706)	(0.659)	(0.393)	(0.529)	(0.300)	(0.536)
Change in $Intangibles_{t-1}$	0.066	0.095	0.111	0.179	0.144	0.115	0.098
	(0.290)	(0.356)	(0.383)	(0.760)	(0.599)	(0.499)	(0.412)
Market-to-Book $Ratio_{t-1}$	0.010	0.021*	0.026*	0.017	0.019	0.004	0.009
	(0.792)	(1.866)	(1.939)	(1.479)	(1.410)	(0.337)	(0.706)
Employee $Variability_{t-1}$	−0.292	−0.145	−0.140	−0.189	−0.187	−0.030	−0.052
	(−1.257)	(−0.650)	(−0.614)	(−0.835)	(−0.768)	(−0.120)	(−0.198)
% Independent Directors		−0.503***	−0.582***	−0.550**	−0.550**	−0.477**	−0.482**
		(−2.639)	(−2.923)	(−2.581)	(−2.500)	(−2.063)	(−2.066)

(*Continued*)

TABLE 4—*(Continued)*

Panel C: Estimates from a model predicting monitorship, including corporate governance and firm predictors

	Monitor (1)	Monitor (2)	Monitor (3)	Monitor (4)	Monitor (5)	Monitor (6)	Monitor (7)
Observations	175	175	175	175	175	175	175
Adjusted R^2	0.044	0.193	0.189	0.285	0.293	0.257	0.252
N/DPA Predictors	No	Yes	Yes	Yes	Yes	Yes	Yes
Corporate Governance Predictors	No	Yes	Yes	Yes	Yes	Yes	Yes
Violation FE	No	No	Yes	No	Yes	No	Yes
Year FE	Yes	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	Yes	Yes

This table presents the coefficients from estimating linear probability models of the likelihood that an N/DPA requires the appointment of a Corporate Monitor, during the period of 2001 to 2019. The dependent variable *Monitor* takes the value of 1 for the N/DPAs which impose a Corporate Monitor and 0 otherwise. Panel A only includes predictor variables related to the deferred or nonprosecution agreement. Panel B includes corporate governance predictors in addition to N/DPA predictors, and panel C includes N/DPA, corporate governance, and firm predictors. Panel B suppresses N/DPA predictors that are not significant, but notes in which models they are present. Similarly, panel C suppresses N/DPA and corporate governance predictors that are not significant, but notes in which models they are present. *t*-statistics are shown in parentheses. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Please see appendix B for a description of the variables. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

Next, we include additional predictor variables related to the governance environment at the firm at the time the N/DPA agreement is being considered. These variables capture both the quality of governance at the firm as well as changes in governance leading up to the N/DPA and include *% Independent Directors, CEO is Chairman*, and *New CEO*: *% Independent Directors* is the percentage of independent directors for the fiscal year ending before the N/DPA agreement; *CEO is Chairman* is an indicator variable equal to 1 if the CEO is the chairman of the board of directors in the year prior to N/DPA agreement; *New CEO* is an indicator variable equal to 1 if the CEO changes between the infraction period and the year prior to the N/DPA. Because the Monitor is responsible for addressing compliance issues at the firm, we expect that firms with better corporate governance (as determined by the DOJ) and those that have improved their governance since the time of the infraction will be less likely to have a Monitor mandate.[22]

Panel B of table 4 presents the results. We lose observations without the requisite governance data, leaving us with 185 observations, which includes 59 Monitors. Column 1 presents the model with only the governance variables and year fixed effects. Columns 2–7 include all N/DPA-specific variables from panel A, although for brevity, we only report variables that are statistically significant. Consistent with our hypothesis, *% Independent Directors* is negative and significant across all specifications. This finding indicates the DOJ places Monitors at firms with perceived weaker governance.

Our final set of prediction models layers on firm-specific variables, including *Size, Leverage, Return on Assets, Asset Quality, Market-to-Book Ratio*, and *Employee Variability*. These variables capture several firm dimensions that may be important inputs when determining an appropriate punishment and its potential collateral damage. In this specification, we lose observations without the requisite Compustat coverage leaving us with 175 observations (including 55 Monitor firms). Panel C of table 4 presents the results of this analysis.[23] Column 1 includes only these firm-specific variables and year fixed effects before adding in governance and N/DPA variables in columns 2–7.

We find that, after including firm-specific controls, the sign and significance of *Voluntary Disclosure, Total Payment Decile, Board Changes*, and *Cooperation* persist with similar magnitudes. The coefficient of *% Independent Directors* continues to be negative and significant with a similar magnitude across specifications. In addition, we find that *Probation Length* and *Compliance Program* load in some specifications. Although the fact that none of the firm-specific variables load significantly, even on their own, may be surprising, the lack of significance is likely explained by selection into the N/DPA

[22] The DOJ's manual, "Evaluation of Corporate Compliance Programs," emphasizes the importance of independence in monitoring. For details, see https://www.justice.gov/criminal-fraud/page/file/937501/download(last accessed: December 24, 2022).

[23] In presenting table 4, panel C results, we suppress insignificant variables from panel A and panel B.

agreement itself, which tends to be offered to large, public firms. That is, these firms are the ones for which the DOJ deemed the collateral consequences of indictment too severe, likely subsuming any significance these coefficients may have otherwise had.

Our findings suggest that the DOJ tends to assign Monitors when the infraction is severe and for firms with mandated board changes and required cooperation agreements. Mitigating the compliance concerns may be too difficult for these firms to navigate without outside assistance, and the DOJ thus requires added assurance that the remediation efforts will succeed. On the other hand, the DOJ is less likely to impose a Monitor when the firm voluntarily discloses wrongdoing and when the firm has stronger perceived governance measures, specifically a greater proportion of independent directors.

5. *Corporate Monitors and Rule Violations*

5.1 BASELINE RESULTS

Next, we employ a difference-in-differences model to determine whether the appointment of a Corporate Monitor is associated with future law violations. The treated sample consists of all N/DPA firms that appoint a Corporate Monitor, whereas the control sample consists of N/DPA firms without Corporate Monitors. If violations decrease during the Monitor's tenure relative to the control sample but revert following the Monitor's departure, we can attribute the violation change more clearly to the Monitor's presence at the firm. The effect of the Monitor, in this case, would be temporary. On the other hand, suppose violations decrease during the Monitor's tenure and, relative to the control, remain low following the Monitor's departure. Although the violation change is permanent, the results are less clearly attributable to the Monitor's presence. That is, other changes could have occurred during the Monitor's tenure, which might have driven the long-term decline in violations.

To determine how the Monitor's presence is associated with law violations, we estimate variations of the following model:

$$\begin{aligned} Violations_{it} = {} & \beta_0 + \beta_1 Post\ Infraction_{it} + \beta_2 During\ Probation_{it} \\ & + \beta_3 Post\ Probation_{it} \\ & + \beta_4 Treat_i + \beta_5 Post\ Infraction_{it} \times Treat_i \\ & + \beta_6 During\ Probation_{it} \times Treat_i + \beta_7 Post\ Probation_{it} \times Treat_i \\ & + \beta_k X_{it-1} + \alpha_i + \delta_t + \epsilon_{it}\ , \end{aligned} \tag{2}$$

where i indexes the firm and t the year. *Violations* is the natural logarithm of the firm's number of rule violations. $Treat$ is an indicator variable and equals 1 for firms that must appoint a Corporate Monitor as part of the N/DPA agreement and 0 otherwise.

The indicator *Post Infraction* equals 1 for the years after the noncompliance event that led to the firm receiving the N/DPA, up until the year of the N/DPA, and 0 otherwise. *During Probation* equals 1 for the years after the N/DPA to the end of the probation period, and 0 otherwise.[24] The probation period is the time during which the N/DPA agreement is active and the DOJ could prosecute the firm if it did not comply with the agreement. Typically, the Monitor is on site at the firm during the probation period. *Post Probation* equals 1 for the years following the end of the probation period, and 0 otherwise. X represents a vector of k explanatory variables and includes time-varying firm characteristics. In additional specifications, we include interactions of firms' compliance- and governance-related N/DPA requirements with *Post Infraction*, *During Probation*, and *Post Probation* to control for any simultaneous changes in compliance or corporate governance. The α_i and δ_t terms represent firm and year fixed effects, and ϵ is the error term.

Table 5, panel A, presents results from the estimation of equation (2). Column 1 of the table does not include the interaction of N/DPA requirements with the *Post Infraction*, *During Probation*, and *Post Probation* indicators, whereas columns 2–9 include these interactions. We include firm and year fixed effects and time-varying, firm-level controls in all specifications. The table shows a negative and significant coefficient for $Treat \times During\ Probation$. The coefficient estimate is consistently negative and of similar magnitude across all specifications. The estimate varies between −0.288 and −0.193, which translates to a reduction in violations of 18%–25% while the Monitor is on site.[25] Finally, we find no significant reductions in violations in the period after the Monitor departs from the firm (indicated by the coefficient estimates of $Treat \times Post\ Probation$).

We also assess trends in the number of violations for treated and control firms from six years before the N/DPA year to six years after the end of the probation period. Figure 3 presents plots of the trends in event time. Panel A of figure 3 shows the unconditional mean number of violations for the treated and control firms separately. There are no discernible differences in the trend of violations between the two groups in the period before the N/DPA year. However, there is a distinct decline in the average violations for the treated group in the probation period. The trend lines for the two groups appear to converge following the end of the probation period.

Panel B of figure 3 shows the conditional trend from a regression where the dependent variable is the number of violations and the base year (omitted) is seven years before the N/DPA year. The regression includes firm fixed effects, event time indicators, and the interaction of *Treat* with event

[24] We use the term "probation" to mean the period for which the firm is subject to the N/DPA. Please see appendix B for more information.

[25] To confirm that these results are not driven by violations of the same type as those that led to the N/DPA, in untabulated tests, we drop these violations from our sample and rerun equation (2). Our results are substantively unchanged.

TABLE 5

Corporate Monitors and Future Rule Violations

Panel A: Full sample

	Violations (1)	Violations (2)	Violations (3)	Violations (4)	Violations (5)	Violations (6)	Violations (7)	Violations (8)	Violations (9)
Post Infraction	0.211***	0.244***	0.193**	0.198***	0.280***	0.291***	0.256***	0.069	0.298***
	(4.173)	(4.023)	(2.059)	(3.793)	(3.014)	(4.740)	(4.028)	(0.533)	(4.905)
During Probation	0.112	0.194**	0.225	0.133*	0.331***	0.242***	0.186**	−0.338***	0.222***
	(1.481)	(2.422)	(1.491)	(1.680)	(2.607)	(2.790)	(2.165)	(−2.806)	(2.720)
Post Probation	0.032	0.096	0.127	0.043	0.176	0.090	0.082	−0.359**	0.139
	(0.373)	(1.100)	(1.261)	(0.482)	(1.230)	(0.971)	(0.905)	(−2.076)	(1.550)
Treat × Post Infraction	−0.062	−0.035	−0.064	−0.059	−0.051	−0.036	−0.052	−0.074	−0.024
	(−0.734)	(−0.433)	(−0.748)	(−0.717)	(−0.592)	(−0.433)	(−0.612)	(−0.861)	(−0.309)
Treat × During Probation	−0.267***	−0.193*	−0.262**	−0.249**	−0.219**	−0.223**	−0.248**	−0.288***	−0.219**
	(−2.610)	(−1.758)	(−2.524)	(−2.459)	(−2.086)	(−2.090)	(−2.377)	(−2.823)	(−2.232)
Treat × Post Probation	−0.091	−0.030	−0.084	−0.066	−0.048	−0.060	−0.071	−0.105	−0.033
	(−0.870)	(−0.274)	(−0.783)	(−0.638)	(−0.470)	(−0.578)	(−0.695)	(−0.987)	(−0.338)
N/DPA req. × Post Infraction		−0.076	0.019	0.080	−0.079	−0.149**	−0.089	0.158	−0.216***
		(−1.073)	(0.188)	(0.715)	(−0.802)	(−2.189)	(−1.203)	(1.127)	(−3.203)
N/DPA req. × During Probation		−0.206**	−0.121	−0.115	−0.273**	−0.256**	−0.164*	0.473***	−0.297***
		(−2.028)	(−0.762)	(−1.133)	(−2.025)	(−2.572)	(−1.663)	(3.801)	(−3.189)
N/DPA req. × Post Probation		−0.168*	−0.106	−0.069	−0.197	−0.137	−0.124	0.398**	−0.298***
		(−1.709)	(−0.951)	(−0.589)	(−1.323)	(−1.450)	(−1.319)	(2.361)	(−3.249)
Observations	2,987	2,987	2,987	2,987	2,987	2,987	2,987	2,987	2,987
Adjusted R^2	0.684	0.684	0.683	0.685	0.686	0.684	0.683	0.685	0.686
N/DPA Requirement	None	Board Changes	Cooperation	Business Changes	Compliance Program	Board Monitoring	Senior Management	Waive Rights	Accounting Mandate

(*Continued*)

TABLE 5—*(Continued)*

Panel B: Matched sample (Coarsened exact matching)

	Violations (1)	Violations (2)	Violations (3)	Violations (4)	Violations (5)	Violations (6)	Violations (7)	Violations (8)	Violations (9)
Post Infraction	0.348***	0.321***	0.330**	0.256***	0.278***	0.390***	0.335***	0.213	0.541***
	(3.099)	(3.472)	(2.308)	(3.574)	(2.843)	(5.345)	(3.887)	(1.082)	(4.276)
During Probation	0.106	0.312**	0.257**	0.068	0.284*	0.306**	0.175	−0.352***	0.304*
	(0.702)	(2.329)	(1.988)	(0.505)	(1.889)	(2.581)	(1.275)	(−2.722)	(1.888)
Post Probation	0.099	0.306**	0.277**	0.040	0.178	0.113	0.153	−0.591**	0.345*
	(0.649)	(2.124)	(2.263)	(0.293)	(1.004)	(0.783)	(0.964)	(−2.402)	(1.832)
Treat × Post Infraction	−0.191*	−0.193*	−0.191	−0.160	−0.191	−0.192	−0.197*	−0.187	−0.171*
	(−1.657)	(−1.678)	(−1.622)	(−1.579)	(−1.615)	(−1.606)	(−1.697)	(−1.587)	(−1.809)
Treat × During Probation	−0.284**	−0.285**	−0.281**	−0.255**	−0.274**	−0.286**	−0.275**	−0.283**	−0.291**
	(−2.148)	(−2.214)	(−2.083)	(−2.033)	(−2.034)	(−2.106)	(−2.113)	(−2.100)	(−2.375)
Treat × Post Probation	−0.145	−0.128	−0.137	−0.102	−0.124	−0.144	−0.107	−0.148	−0.146
	(−1.072)	(−0.969)	(−0.983)	(−0.778)	(−0.903)	(−1.036)	(−0.855)	(−1.090)	(−1.175)
N/DPA Req. × Post Infraction		0.031	0.017	0.301*	0.073	−0.070	0.018	0.140	−0.357***
		(0.352)	(0.104)	(1.939)	(0.601)	(−0.707)	(0.167)	(0.659)	(−3.851)
N/DPA Req. × During Probation		−0.264**	−0.154	0.102	−0.193	−0.316**	−0.129	0.466***	−0.357***
		(−2.173)	(−1.013)	(0.672)	(−1.344)	(−2.405)	(−0.950)	(3.069)	(−2.733)
N/DPA Req. × Post Probation		−0.280**	−0.189	0.168	−0.104	−0.071	−0.172	0.693***	−0.423***
		(−2.298)	(−1.592)	(0.921)	(−0.636)	(−0.487)	(−1.178)	(2.638)	(−2.891)
Observations	2,579	2,579	2,579	2,579	2,579	2,579	2,579	2,579	2,579
Adjusted R^2	0.671	0.673	0.670	0.675	0.671	0.674	0.672	0.672	0.677
N/DPA Requirement	None	Board Changes	Cooperation	Business Changes	Compliance Program	Board Monitoring	Senior Management	Waive Rights	Accounting Mandate

(*Continued*)

TABLE 5—*(Continued)*

Panel C: Matched sample (Entropy Balancing)

	Violations (1)	Violations (2)	Violations (3)	Violations (4)	Violations (5)	Violations (6)	Violations (7)	Violations (8)	Violations (9)
Post Infraction	0.232**	0.404***	1.111***	0.238**	0.519**	0.478***	0.407***	0.342	0.461***
	(2.470)	(3.104)	(3.298)	(2.510)	(2.514)	(5.167)	(3.626)	(1.033)	(4.446)
During Probation	0.271*	0.530***	0.316*	0.290**	0.573**	0.546***	0.467***	−0.225	0.537***
	(1.950)	(2.948)	(1.834)	(2.082)	(2.020)	(3.516)	(2.822)	(−1.302)	(3.354)
Post Probation	0.134	0.360**	0.416***	0.155	0.115	0.196	0.357**	0.175	0.395**
	(0.921)	(2.216)	(3.908)	(1.061)	(0.627)	(1.430)	(2.196)	(0.827)	(2.068)
Treat × Post Infraction	0.009	−0.005	0.010	0.012	0.019	−0.007	−0.021	0.010	−0.042
	(0.083)	(−0.054)	(0.095)	(0.113)	(0.181)	(−0.073)	(−0.209)	(0.097)	(−0.446)
Treat × During Probation	−0.313**	−0.336**	−0.311**	−0.287**	−0.286**	−0.323**	−0.348**	−0.309**	−0.382***
	(−2.234)	(−2.466)	(−2.218)	(−2.045)	(−2.080)	(−2.571)	(−2.516)	(−2.215)	(−2.768)
Treat × Post Probation	−0.022	−0.044	−0.019	0.016	−0.014	−0.012	−0.050	−0.019	−0.093
	(−0.168)	(−0.333)	(−0.141)	(0.118)	(−0.104)	(−0.089)	(−0.374)	(−0.140)	(−0.666)
N/DPA Req. × Post Infraction		−0.203*	−0.880**	−0.059	−0.300	−0.323***	−0.237**	−0.112	−0.326***
		(−1.674)	(−2.519)	(−0.342)	(−1.484)	(−3.622)	(−2.232)	(−0.336)	(−3.363)
N/DPA Req. × During Probation		−0.309*	−0.046	−0.227	−0.337	−0.393***	−0.286**	0.501***	−0.404***
		(−1.883)	(−0.228)	(−1.525)	(−1.252)	(−2.723)	(−2.065)	(3.187)	(−3.001)
N/DPA Req. × Post Probation		−0.259*	−0.284**	−0.200	0.013	−0.112	−0.340**	−0.043	−0.403***
		(−1.785)	(−2.262)	(−1.082)	(0.087)	(−0.903)	(−2.404)	(−0.198)	(−2.921)
Observations	2,941	2,941	2,941	2,941	2,941	2,941	2,941	2,941	2,941
Adjusted R^2	0.655	0.659	0.656	0.657	0.658	0.662	0.661	0.656	0.665
N/DPA Requirement	None	Board Changes	Cooperation	Business Changes	Compliance Program	Board Monitoring	Senior Management	Waive Rights	Accounting Mandate

(*Continued*)

TABLE 5—*(Continued)*

Panel D: Matched sample (Matched on text of N/DPA)		
	Violations (1)	Violations (2)
Post Infraction	0.218***	0.221***
	(4.019)	(3.073)
During Probation	0.103	0.128
	(1.267)	(1.272)
Post Probation	0.041	0.069
	(0.469)	(0.612)
Treat × Post Infraction	−0.044	−0.023
	(−0.499)	(−0.240)
Treat × During Probation	−0.198*	−0.209*
	(−1.845)	(−1.776)
Treat × Post Probation	−0.025	−0.015
	(−0.242)	(−0.130)
Observations	2,391	1,890
Adjusted R^2	0.674	0.702
Matching	Text (Cosine similarity threshold)	Text (Cosine similarity one-to-one)

(*Continued*)

TABLE 5—*(Continued)*

Panel E: Persistence of governance changes (Coarsened exact matching)

	Violations (1)	Violations (2)	Violations (3)	Violations (4)
Post Infraction	0.276***	0.550***	0.366***	0.297***
	(3.607)	(3.843)	(6.360)	(4.043)
During Probation	0.363***	0.326*	0.338***	0.199
	(3.364)	(1.809)	(3.362)	(1.457)
Post Probation	0.303**	0.294	0.127	0.187
	(2.229)	(1.377)	(0.860)	(1.116)
Treat × Post Infraction	−0.062	−0.214	−0.176	−0.031
	(−0.549)	(−1.352)	(−1.608)	(−0.248)
Treat × During Probation	−0.420*	−0.343*	−0.433**	−0.325*
	(−1.926)	(−1.781)	(−2.156)	(−1.839)
Treat × Post Probation	−0.163	−0.041	−0.318*	−0.193
	(−0.843)	(−0.200)	(−1.790)	(−1.036)
N/DPA Req. × Post Infraction	0.084	−0.375***	−0.048	0.077
	(0.787)	(−3.041)	(−0.381)	(0.568)
N/DPA Req. × During Probation	−0.340**	−0.393**	−0.384**	−0.164
	(−2.600)	(−2.149)	(−2.435)	(−0.895)
N/DPA Req. × Post Probation	−0.288**	−0.357*	−0.124	−0.240
	(−1.976)	(−1.725)	(−0.650)	(−1.214)

(*Continued*)

TABLE 5—*(Continued)*

Panel E: Persistence of governance changes (Coarsened exact matching)

	Violations (1)	Violations (2)	Violations (3)	Violations (4)
Treat × N/DPA Req. × Post Infraction	−0.141	0.063	−0.018	−0.237
	(−0.823)	(0.336)	(−0.096)	(−1.151)
Treat × N/DPA Req. × During Probation	0.207	0.080	0.225	0.073
	(0.813)	(0.324)	(0.873)	(0.297)
Treat × N/DPA Req. × Post Probation	0.082	−0.160	0.252	0.157
	(0.331)	(−0.615)	(0.990)	(0.598)
Observations	2,579	2,579	2,579	2,579
Adjusted R^2	0.673	0.677	0.675	0.673
N/DPA Requirement	Board Changes	Accounting Mandate	Board Monitoring	Senior Management

This table presents OLS coefficient estimates for changes in the number of violations for N/DPA-firms that were assigned a Corporate Monitor, using a difference-in-differences specification. The sample period is from 2000 to 2019. The dependent variable is the natural log of the number of violations in a given firm-year. Column 1 does not consider other N/DPA requirements, whereas columns 2–9 do. N/DPA requirements take the value of 1 if they are required by the N/DPA, and 0 otherwise. *Treat* takes the value of 1 for the firms assigned a Corporate Monitor and 0 otherwise. Panels A, B, C, and D show the results for the full sample, coarsened exact matched sample, entropy balanced sample, and text-based matched sample; whereas panel E assesses the persistence of governance changes using coarsened exact matching. All specifications include firm control variables *Size*, *Leverage*, *Return on Assets*, *Change in Intangibles*, *Market-to-Book Ratio*, *Employee Variability*, and firm and year fixed effects. *t*-statistics are shown in parentheses below the coefficient estimates. To mitigate the effects of extreme observations, all continuous control variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Standard errors are clustered by firm. Please see appendix B for a description of the variables. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

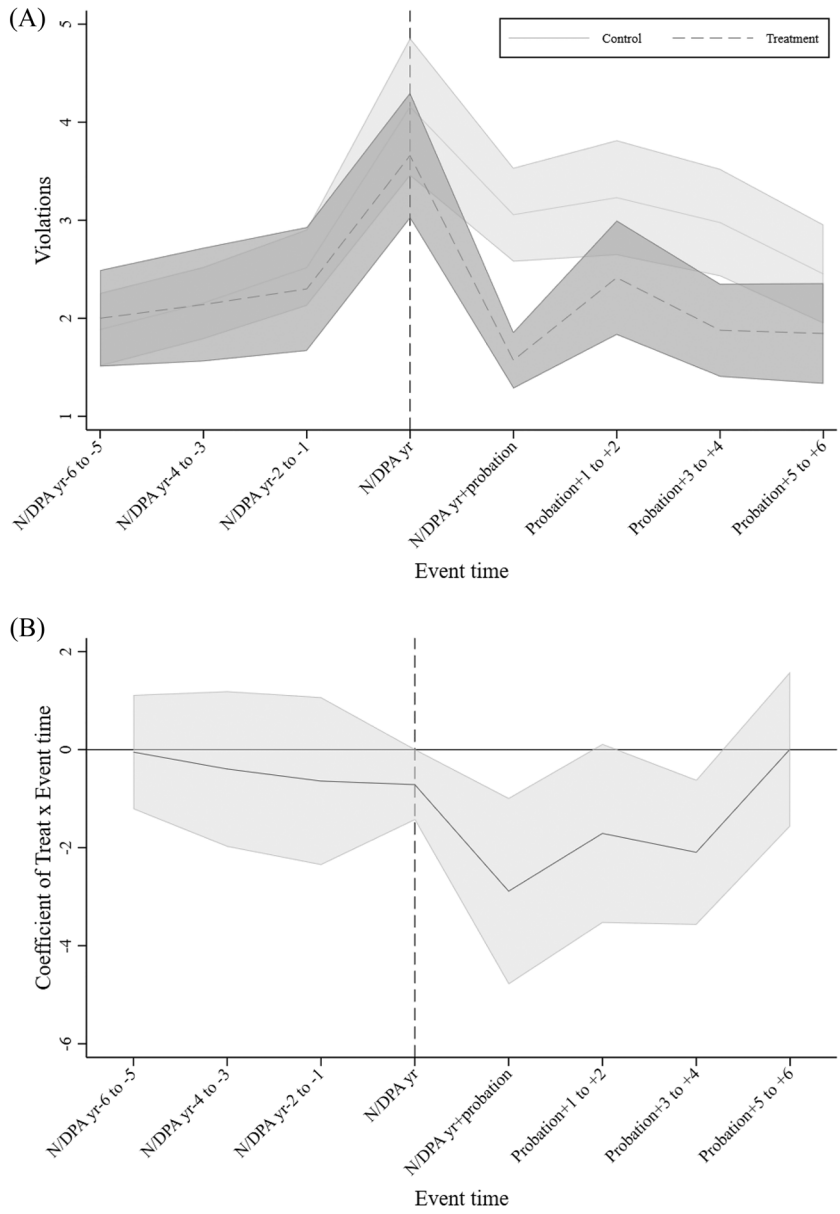

FIG 3.—Time trend of violations by event time. This figure shows the relation between Corporate Monitors and violations in event time and includes two-tailed 80% confidence intervals for each point estimate. Panel A presents the mean violation count separately for the treatment and control groups. Panel B presents the coefficient plot for the interaction of *Treat* with event time indicators from a regression where the dependent variable is the number of violations, and which includes firm fixed effects and control variables. The sample period is from 2000–19.

time indicators. The figure plots the coefficients from the interaction of *Treat* with event time indicators. The trend from the plot of coefficients is consistent with the unconditional trends: Violations for the treated firms are not significantly different from control firms in the period leading up the N/DPA and decline in the probation period before increasing in the years following the end of the probation period. These figures support our main results as well as the reasonability of the parallel trends assumption that underlies our difference-in-differences specification.

Overall, the findings in this section—that violations are lower for the treated firms relative to the control firms only during the Monitor's tenure—suggest that this decline in violations is more clearly attributable to the presence of the Monitor. Nonetheless, specific N/DPA characteristics that may differ for Monitor and non-Monitor firms could drive the reduction in violations. We address this concern next.

5.2 MATCHING ANALYSES BASED ON N/DPA CHARACTERISTICS

To mitigate concerns that N/DPA characteristics, other than the appointment of the Monitor, could be driving our results, we create a balanced sample of treated and control firms by matching on variables that predict the appointment of Corporate Monitors using three different approaches. In our first approach, we use CEM to minimize the imbalance between the treated and control samples (Iacus et al. [2012]). We match on firm and agreement attributes including *Size*, *Total Payment*, *% Independent Directors*, *Voluntary Disclosure*, and *Board Changes* (Blackwell et al. [2009]). Our goal is to eliminate the significant differences in pretreatment characteristics between the treated and control populations while keeping our sample as large as possible. To achieve this, we choose variables that are significantly different in the unmatched populations and significant in our prediction models for determining Corporate Monitor assignment. Our treated and control samples are balanced across the majority of observable firm and N/DPA characteristics after the matching procedure.[26]

We reestimate equation (2) using the matched sample. Table 5, panel B, presents the results of this estimation. As before, column 1 does not include interactions of the event time indicators with N/DPA requirements variables, whereas columns 2–9 include these interactions to account for any simultaneous changes in compliance or governance. Similar to the results using the unmatched control sample, the coefficients on *Treat* ×

[26] For the indicator variables (*Voluntary Disclosure* and *Board Changes*), we use the Scott algorithm to determine coarsening breakpoints. For the continuous variables, we use the following percentiles as breakpoints: *Size* uses the median; *Total Payment* uses the 5th and 95th percentiles; and *% Independent Directors* uses the 5th, 50th, and 95th percentiles. Table IA1 in the internet appendix shows the differences in firm and N/DPA characteristics between the treated and control samples after the matching procedure. The two samples are balanced with the exception of *Prior Violations of Same Type*. However, this variable does not load significantly in our prediction models in table 4, panel A.

During Probation are consistently negative and significant with magnitudes varying between −0.291 and −0.255. These estimates translate to a reduction in violations of 23%–25%. The coefficient of *Treat* × *Post Probation* continues to be insignificant, indicating that violations revert to pre-N/DPA levels following Monitors' departure from firms.

In our second approach, we match on the N/DPA contract features and firm-specific factors using entropy balancing, which creates covariate balance for treated and control groups by assigning weights to the observations (Hainmueller [2012]). Specifically, we match on the first three moments of agreement- and firm-specific characteristics. The agreement-specific characteristics we match on are significantly different in the treated and control samples (table 2, panel B). These include *Total Payment Decile, Board Changes, Compliance Program, Board Monitoring, Senior Management*, and *Accounting Mandate*.[27] The results from this analysis are presented in table 5, panel C, and show consistent results. In particular, the coefficient estimates on *Treat* × *During Probation* range between −0.286 and −0.382, which translates to a 25%–32% reduction in violations during the Monitor's tenure. As before, we find no significant reductions in violations in the period after the Monitor departs from the firm.

Although the variables representing N/DPA features attempt to capture the additional compliance requirements imposed on the firm, the possibility exists that differences in compliance requirements remain and are driving our results. Therefore, in our third approach, we directly match on the similarity of the compliance requirements language in the N/DPA (Mozer et al. [2020]). We collect compliance requirement language from each N/DPA, excluding any language pertaining to a Corporate Monitor mandate. Specifically, we exclude language related to the selection process, reporting requirements, term of the Monitor, and other language which is not related to N/DPA compliance requirements, but is driven solely by the existence of a Monitor at the firm. Appendix C describes the methodology for the text-based matching. We compute cosine similarity scores between all treated and control firms. Using these scores, we perform two separate matching procedures. First, we match treated-control pairs based on the highest cosine similarity score, without replacement, while maximizing the average cosine-similarity score. Second, we remove all firms (treated or control) which have no close matches in the sample.[28] We rerun our main analyses using these two separate matching procedures and present these

[27] The firm-specific factors we match on include *Size, Return On Assets*, and *Market-to-Book Ratio*. The entropy balancing algorithm fails to achieve convergence on the first three moments if we include the additional firm characteristics of *Leverage*, *Change in Intangibles*, and *Employee Variability*. Therefore, we exclude these three variables from the matching procedure, but include them as controls.

[28] Specifically, we remove firms with a maximum cosine-similarity score less than 0.25. The cosine similarity scores are on a scale of 0 to 1, with 1 being identical, and 0 being completely distinct.

results in table 5, panel D. The text-matching procedures hold constant the N/DPA compliance requirements; thus, we do not include the interactions with N/DPA requirement indicator variables. Our main results are robust to the text-based matching methods.

Our results in table 5, panel A–panel C, show a persistent effect of *Board Changes* and *Accounting Mandate* on reduced future violations. A concern is that if Monitors were operating through the channel of implementing these N/DPA-related compliance and governance changes, then we cannot conclude that Monitors were not effective in the long run in reducing recidivism. To evaluate this channel, in additional analyses, we include the triple interaction of *Treat* with *N/DPA Requirement*× *Post Probation* and find insignificant coefficients on this triple interaction. The results are presented in columns 1 and 2 of table 5, panel E. These results suggest that Monitors are unlikely to have a persistent effect on reducing future violations through these compliance and governance changes. There is an additional concern that boards or senior management of Monitor firms may increase their monitoring efforts in the wake of a severe violation that necessitates a Monitor. However, the results in columns 3 and 4 of panel E assuage that concern.[29]

In additional robustness tests, we match the treated and control sample on firms' culture of integrity to get at constructs such as a corporate culture of dishonest dealings, faulty tone at the top, and boards that are beholden to management. Specifically we use entropy balancing and, in addition to the firm and N/DPA requirement-specific variables, match on a measure of integrity in the period prior to the appointment of the Monitor. The measure of integrity is from Li et al. [2021] who use machine learning and a corpus of earnings call transcripts to measure corporate culture.[30] We believe that this measure should capture aspects of a more detrimental corporate culture that could result in greater violations. Matching on preexisting levels of integrity, we test for changes in treated firms' violations and find that our inferences continue to hold. Also, we find consistent results by using an alternative measure of violations where we include only violations of the firm and its subsidiaries of record on the date of the N/DPA.[31]

Finally, we assess the sensitivity of our results to unobserved factors using the methods detailed in Altonji et al. [2005] and Oster [2019]. Specifically, we calculate the magnitude of selection on unobservables that would be required for there to be no effect of the Monitor, that is, for the coefficient of *Treat* × *During Probation* to equal zero. Figure 4 presents the results of our analysis for values of maximum R^2 ranging from 0.75 to 1. In all cases, the

[29] Anecdotal evidence suggests increased monitoring by boards and senior management of treated firms is, in practice, not as critical a concern. For instance, please see the panel discussion WWCDA Global Enforcement & Compliance Series, Part 3 (last accessed: November 25, 2022).

[30] We thank Li et al. [2021] for sharing data related to their culture variables.

[31] Internet appendix table IA2, table IA3, and table IA4 present these robustness test results.

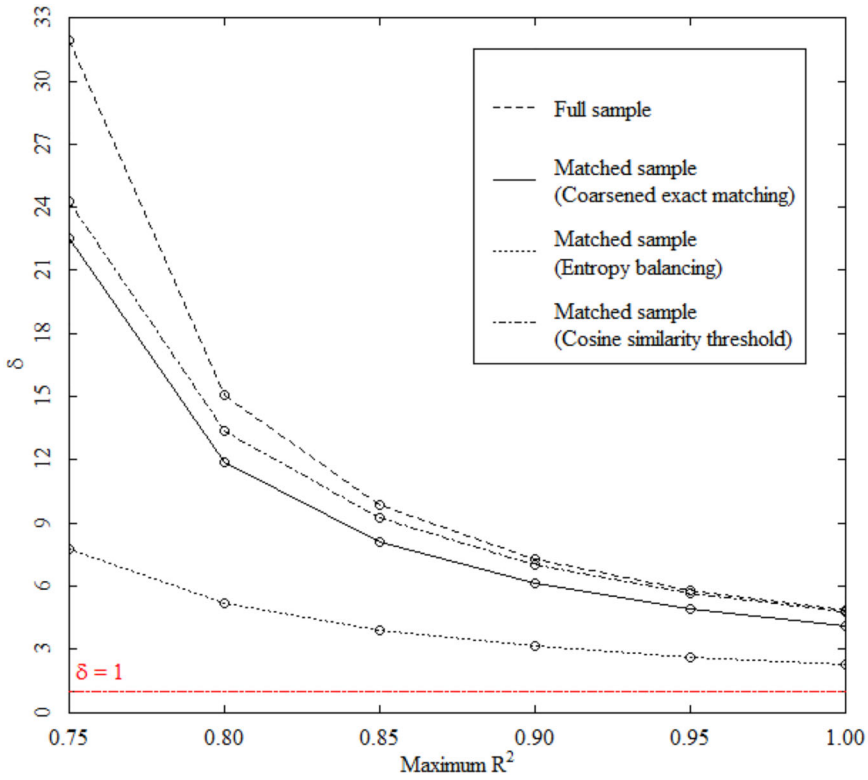

FIG 4.—Sensitivity analysis. This figure shows the degree of selection on unobservables relative to observables necessary for there to be no effect of the Monitor, that is, for the coefficient of *Treat×During Probation* to equal zero (Altonji et al. [2005], Oster [2013], [2019]). δ is the coefficient of proportionality and measures the degree of selection on unobservables relative to observables. *Maximum* R^2 is the total variation explained by observed and unobserved factors.

selection on unobservables needs to be significantly higher (ranging from 2 to 32 times) than the selection on observables to get $\beta = 0$. These sensitivity analyses suggest that it is unlikely that the selection on unobservables would significantly bias our results.[32]

The results in this section indicate that the association between the Monitor and violations is temporary and dissipates with the Monitor's departure from the firm. The temporary effect allows us to tie better the reduction in violations to the presence of the Monitor. Further, results from our matching analyses and various robustness tests suggest it is unlikely that differences in N/DPA characteristics between Monitor and non-Monitor firms drive the reduction in violations.

[32] In an additional sensitivity analysis, we calculate the bias-adjusted β-coefficients by assuming that the relative degree of selection on observables is equal to that of unobservables and find consistent results. We describe this analysis in section 2 of the internet appendix.

6. *Corporate Monitors and Ethics and Compliance Norms*

Next, we study the mechanism through which Monitors influence rule violations. We base our analyses on the mandate of the Corporate Monitor, which is clearly defined by the DOJ in the Morford memorandum (Morford [2008]). The memo states the following: "A [M]onitor's primary role is to evaluate whether a corporation has both adopted and effectively implemented ethics and compliance programs to address and reduce the risk of recurrence of the corporation's misconduct. A well-designed ethics and compliance program that is not effectively implemented will fail to lower the risk of recidivism." Consistent with this mandate, more recently, Deputy Attorney General Lisa Monaco issued a memo regarding the DOJ's corporate criminal enforcement policies, which frequently emphasizes the importance of firms creating a culture of ethics and compliance (Monaco [2022]). The memo updates previous guidance on when and whether to impose a Corporate Monitor, indicating prosecutors should impose a Corporate Monitor when a corporation's culture needs significant reform to better adhere to the DOJ's ethics and compliance expectations.

Therefore, based on the Monitor's mandate, to better identify the effect of the Monitor, we measure changes in firms' adoption and implementation of ethics and compliance programs as such changes are more directly attributable to the Monitor. Specifically, we study changes in firms' ethics and compliance norms. Kotter and Heskett [1992] argue that corporate culture comprises shared values and group behavior norms. Shared values are significant concerns and goals shared by the majority in a group that governs group behavior and tend to persist over time, even when the composition of the group changes. An example of shared values is that managers care about customers. Group behavior norms are pervasive ways of acting in a group—current members teach these ways of behaving to new members by rewarding those who comply and punishing those who do not. An example of group behavior norms is that customers' requests must be responded to immediately.

Importantly, shared values are invisible and harder to change, whereas group behavior norms are visible and easier to change (Kotter and Heskett [1992]). Consistent with these ideas, other literature has argued that corporate culture differs from the societal culture, in that, corporate culture can often change, especially based on major events (Graham et al. [2022], Guiso et al. [2015], Weber et al. [1996]). Therefore, events such as receiving an N/DPA or instituting a Corporate Monitor could influence a dimension of firm culture, specifically group behavior norms. If Monitors are effective in their mandate, we should find relative improvements to ethics and compliance norms at firms with Monitors.

To measure changes in firms' ethics and compliance norms, we follow the methodology in Li et al. [2021], who use earnings conference call transcripts and a semisupervised machine learning approach to measure innovation, integrity, quality, respect, and teamwork. At the core of this

approach is a word embedding model (*Word2vec*; Mikolov et al. [2013]) to identify synonymous words in a given context and quantify the text—that is, represent each distinct word with a group of numbers. This approach is based on the idea that words with similar meanings occur together and uses a neural network to identify synonyms from neighboring words.

We adopt this approach to measure ethics and compliance norms at the N/DPA firm. If, following the appointment of a Corporate Monitor, the firm is committed to improving norms related to ethics and compliance, then we should find that top managers share this commitment in their communications with key stakeholders. We focus on the more spontaneous question-and-answer section of the conference calls to avoid capturing mere cheap talk or window-dressing. Because senior management influences prevailing group behavior norms, if they are committed to instituting changes in ethics and compliance norms, then such a commitment should percolate into their more spontaneous communications.

The methodology requires us to provide seed words, which in our case include the words "ethics" and "compliance" and their derivatives, including "ethic," "ethical," "ethically," "comply," and "compliant." We then train the *Word2vec* model to get the word vector associated with these seed words. We manually inspect the words to ascertain that words relevant to our seed words are included.[33] We then score the ethics and compliance culture at the firm-year level by using the weighted count of the number of words associated with ethics and compliance (based on our dictionary) divided by the total number of words in the document. We use the Term Frequency Inverse Document Frequency (TFIDF) index as our weights. This weighting scheme accounts for a word's importance in a given document and in the entire corpus of transcripts.[34]

Our results are presented in table 6, panel A, and suggest significant improvements in ethics and compliance norms for treated firms in the probation period, that is, when the Monitor is on site. Specifically, our ethics and compliance measures increase by a relative 0.261–0.314 for treated firms during the period when the Monitor is on site. The mean value of the measures is 1.107, suggesting that the ethics and compliance measures increase by 24%–28% during the tenure of the Monitor.

Table 6, panel A, also shows that, consistent with our results for violations, there is a distinct decline in the ethics and compliance measures when the Monitor is no longer on site. Similar to the Monitor's appointment, their exit from the firm is also a significant corporate event. To the extent that management's genuine or purported commitment to changing group behavior norms related to ethics and compliance has not taken root at the

[33] Section 4 in the internet appendix provides the 60 most representative words that appear in our dictionary.

[34] Our inferences are unchanged if we use WFIDF as an alternative weighting scheme (untabulated). In TFIDF, term frequency (TF) is the numerator, whereas, in WFIDF, log(1+TF) is the numerator.

TABLE 6
Corporate Monitors and Ethics and Compliance Norms

Panel A: Changes in ethics and compliance norms

	Ethics and Compliance (All) (1)	Ethics and Compliance (300+) (2)
Post Infraction	0.052	0.026
	(0.659)	(0.339)
During Probation	−0.059	−0.106
	(−0.562)	(−1.042)
Post Probation	−0.051	−0.121
	(−0.387)	(−0.959)
Treat × Post Infraction	−0.012	0.070
	(−0.080)	(0.514)
Treat × During Probation	0.261*	0.314**
	(1.742)	(2.156)
Treat × Post Probation	0.273	0.339
	(1.283)	(1.621)
Observations	1,777	1,771
Adjusted R^2	0.374	0.398

Panel B: Structural mediation analysis

	Coefficient	*z*-Statistic
Model (1):		
Direct Effect		
β\{Violations, Monitor\}	−0.010	−0.11
Indirect Effect		
β\{Norms, Monitor\} × β\{Violations, Norms\}	0.015*	1.81
Observations	1,777	
Model (2):		
Direct Effect		
β\{Violations, Monitor\}	−0.010	−0.10
Indirect Effect		
β\{Norms, Monitor\} × β\{Violations, Norms\}	0.018*	1.95
Observations	1,771	

This table presents OLS estimates of the effect of Corporate Monitors on N/DPA firms' ethics and compliance norms for 2000–19. Panel A presents coefficient estimates for changes in the measure of ethics and compliance for N/DPA-firms. *Treat* takes the value of 1 for the firms assigned a Corporate Monitor and 0 otherwise. In column 1, *Ethics and Compliance (All)* is the norms measure calculated using all earnings conference call transcripts, whereas in column 2 *Ethics and Compliance (300+)* is calculated using only earnings conference call transcripts of 300 words or greater. Panel B presents the results of a structural mediation analysis where the indirect effect measures the Monitor's influence on violations through changes in firms' norms and the direct effect includes all other pathways through which the Monitor influences future violations. Model 1 uses *Ethics and Compliance (All)* as the measure of norms , whereas Model 2 uses *Ethics and Compliance (300+)*. All specifications include firm control variables *Size*, *Leverage*, *Return on Assets*, *Change in Intangibles*, *Market-to-Book Ratio*, and *Employee Variability*, and firm and year fixed effects. *t*-statistics are shown in parentheses below the coefficient estimates. Standard errors are clustered by firm. To mitigate the effects of extreme observations, all continuous control variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Please see appendix B for a description of the variables. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed).

firm, the Monitor's exit could lead to a relapse into old methods of conduct that led to the N/DPA. Our results are consistent with this interpretation.[35]

We next relate the changes in ethics and compliance to recidivism. Specifically, we use structural equation modeling to test whether changes in ethics and compliance norms is the mediating variable through which Monitors influence repeat violations (MacKinnon et al. [2007], MacKinnon [2012]). We measure the indirect and direct effects of Monitors on violations, as shown in appendix D. The indirect effect captures Monitors' influence on violations through the channel of changes in firms' ethics and compliance norms. The direct effect includes all other pathways through which the Monitor influences future violations except through ethics and compliance. We present findings from this analysis in table 6, panel B. The results show a significant indirect effect but an insignificant direct effect, suggesting full mediation of ethics and compliance variables. That is, Monitors are unlikely to influence future violations other than through changes in ethics and compliance norms.

7. *Additional Analyses*

7.1 MONITOR CHARACTERISTICS

We next explore Monitor characteristics and their association with changes in firms' ethics and compliance norms. We source data on Monitor characteristics from the CPR, Global Investigations Review, LinkedIn, law firm Web sites, and the DOJ's Web site. Table 7, panel A, presents descriptive statistics related to Monitorship-specific and Monitor-specific characteristics. Regarding the Monitor mandates, 32 (54%) Monitorships were directed by a specific duties attachment, which lays out the duties of the Corporate Monitor, the number of reports the Monitor must provide to the DOJ, and the duration of their tenure. The mean duration of the Monitorship was 31 months, and the mean (median) Monitor was required to submit 3.76 (3) reports during the Monitorship.

Of the 59 Corporate Monitors in our sample, we could collect the identities of 57. Of these, the majority (86%) had a law degree—83% had a JD and 16% an LLM. The average Monitor is highly experienced—the average legal experience is 27 years, 23% had taught law, 33% had clerked for a federal judge, and 72% are former prosecutors. Furthermore, a quarter of the sample had prior experience serving as Monitors, and 33% worked at law firms with prior Monitorship experience.

Using these characteristics, we conduct cross-sectional tests to understand their influence on Monitor effectiveness. Specifically, we subset our

[35] In table IA5 of the internet appendix, we present results from a specification using the Li et al. [2021] *Integrity* measure as the dependent variable instead of our ethics and compliance measure. The inferences are substantively similar to those from the preceding analysis. That is, firms with Corporate Monitors demonstrate improved *Integrity* during the tenure of the Monitor; however, this improvement does not persist post-Monitorship.

TABLE 7
Monitor Characteristics

Panel A: Descriptives on Monitor characteristics

	N	Mean	St. Dev	25%	Median	75%
Monitorship-specific						
Duties Attachment	59	0.542	0.502	0.000	1.000	1.000
Monitorship Duration (Months)	59	31.017	9.659	36.000	24.000	36.000
Report Count	59	3.763	2.003	3.000	3.000	5.000
Monitor-specific						
Has JD	57	0.825	0.384	1.000	1.000	1.000
Has LLM	57	0.158	0.368	0.000	0.000	0.000
Has Law Degree	57	0.860	0.350	1.000	1.000	1.000
Law Experience (Years)	57	27.246	13.895	21.000	29.000	36.000
Law Professor	57	0.228	0.423	0.000	0.000	0.000
Clerked for Federal Judge	57	0.333	0.476	0.000	0.000	1.000
Former Prosecutor	57	0.719	0.453	0.000	1.000	1.000
Prior Monitor Experience	57	0.246	0.434	0.000	0.000	0.000
Firm Prior Monitor Experience	57	0.333	0.476	0.000	0.000	1.000

(*Continued*)

TABLE 7—*(Continued)*

Panel B: Monitor characteristics and ethics and compliance norms

	Ethics and Compliance (300+) (1)	Ethics and Compliance (300+) (2)
Post Infraction	0.149	−0.543***
	(1.090)	(−2.997)
During Probation	0.164	−0.176
	(1.104)	(−0.444)
Post Probation	0.229	−0.722
	(1.239)	(−1.268)
Characteristic × Post Infraction	0.149	0.023***
	(0.757)	(4.315)
Characteristic × During Probation	0.479*	0.018*
	(1.964)	(1.747)
Characteristic × Post Probation	0.979*	0.043*
	(1.776)	(1.739)
Observations	562	562
Adjusted R^2	0.321	0.332
Characteristic	Prior Monitor Experience	Monitorship Duration

This table presents details related to Monitors' characteristics. Panel A presents descriptive statistics. Panel B presents coefficient estimates for changes in ethics and compliance norms for Monitor firms only. The sample period is from 2000 to 2019. *Characteristic* refers to whether the Monitor has served as a Corporate Monitor before (*Prior Monitor Experience*) in column 1 and the length of the Monitorship (*Monitorship Duration*) in column 2. *Treat* takes the value of 1 for the firms assigned a Corporate Monitor and 0 otherwise. All specifications include firm control variables *Size*, *Leverage*, *Return on Assets*, *Change in Intangibles*, *Market-to-Book Ratio*, and *Employee Variability*, and firm and year fixed effects. *t*-statistics are shown in parentheses below the coefficient estimates. Standard errors are clustered by firm. To mitigate the effects of extreme observations, all continuous control variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Please see appendix B for a description of the variables. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed).

sample to only Monitor firms and run the same model as we present in table 6, panel A. However, instead of interacting *Treat* (which is 1 for all firms in this subset) with the time indicators, we interact *Characteristic*, which is a Monitor- or Monitorship-specific characteristic. The remaining variables are defined as before. Our results, presented in table 7, panel B, indicate that two characteristics—*Prior Monitor Experience* and *Monitorship Duration*—are significantly associated with improvements in firms' ethics and compliance norms. We do not find the remaining Monitor characteristics to be significantly associated with changes in ethics and compliance norms (untabulated).[36] Importantly, Monitors with these characteristics are associated with improvements in firms' commitment to ethics and compliance norms that persist beyond the tenure of the Monitor. These results indicate that Monitors with prior experience in similar roles and those who spend a longer time at their assigned firms oversee lasting changes.

7.2 DIRECT AND INDIRECT COSTS OF CORPORATE MONITORS

In this section, we discuss Monitors' direct and indirect costs. Direct costs include the fees paid to Monitors, which are usually not publicly disclosed. Based on a search of public sources, including legal Web sites, the press, and discussions with attorneys who are experts in the area, we estimate that the entire Monitorship costs $30 million to $50 million on average, with one Monitorship reportedly costing $130 million.[37] In addition to the costs of the Monitor herself, this estimate includes the costs of any team (such as attorneys, forensic accountants, or compliance consultants) that the Corporate Monitor requires to perform the duties set out by the DOJ. The costs for the team must also be paid by the firm and will likely vary with the scope of the Monitor, the duration of the N/DPA, and the severity of the misconduct. Based on our discussions and publicly available details, we arrive at an estimate of the cost for the Monitor herself ranging between $1,500 and $2,000 per hour. Given the average Monitor firm in our sample has an agreement length of 31 months, and assuming the Monitor works full time at the firm with roughly 173 working hours per month, we estimate a total cost of $8,044,500 to $10,726,000 for the average Corporate Monitor's fees.[38] The total costs of the Monitorship are significant as they

[36] We also estimate this model with *Violations* as the dependent variable and do not find the Monitor characteristics to be significantly associated with changes in violations (untabulated). However, our tests might have low power due to the discrete nature of violations, which have less variability than our ethics and compliance measures. Additionally, the sample size used for these analyses is relatively small and includes only the Monitor firms, which could also contribute to the underpowered tests.

[37] See, for example, "Rethinking Corporate Monitors: DOJ Tells Companies To Mind Their Own Business," *Forbes*, October 15, 2018; "White Collar – Corporate Monitors: Peace, at What Cost?" *Crowell*, January 2018.

[38] It is 2,080 working hours per year ÷ 12 months = 173 working hours per month; 2,080 hours is equivalent to one person working for 40 hours per week and assuming 52 weeks in a year.

represent 2% of the average net income before extraordinary items for the firms in our sample.

In addition to direct costs, firms may also incur indirect costs of having a Monitor. For example, given the high direct costs of a Monitor, firms may undertake restructuring activities to cut costs in others areas. Also, firms with Corporate Monitors may refrain from engaging in more risky but value-adding projects and thus may be less innovative in the long run. Accordingly, we first explore whether treated firms are more likely to incur positive restructuring charges relative to control firms and find no difference for firms with a Monitor relative to control firms.[39]

Next, we evaluate changes in innovation for treated firms relative to control firms by using two measures of innovation. Our first measure is the number of patents for which N/DPA firms apply each year. However, because not all patents are innovative, our second measure is the patent-innovation measure developed by Kogan et al. [2017]. This measure captures the economic value of innovations by using stock market reactions to patent grants. Because stock prices are forward-looking, the measure estimates the private value to the patent holder. We aggregate this measure at the firm-year level in our analysis.

Table 8 presents the results from this analysis. As column 1 of the table shows, although treated firms are not any less innovative during the Monitor's tenure, upon the Monitor's departure, treated firms experience a decline in the number of patents applied for, as compared to control firms that did not have to retain a Corporate Monitor. In terms of economic magnitude, treated firms apply for 43 fewer patents relative to control firms in the postprobation period. We find consistent results in column 2 of table 8, where the dependent variable is the economic value of the patents. Based on this measure, treated firms experienced a relative 56% decline in innovation following the Monitor's departure. Our analyses suggest that it is not just that firms that had Monitors apply for fewer patents in the aftermath of a Monitor, but these patents are also less innovative.

We also explore whether Monitor firms engage in less research and development by reestimating our main specification using research and development costs (scaled by average total assets) as the outcome variable (*R&D Expense*). Consistent with a decline in innovation, we find that treated firms invest less in research and development relative to control firms during the probation period (column 3 of table 8), which may help explain the reduction in patents observed in the postprobation period.

Overall, our results in this section suggest that Monitor firms experience significant direct and indirect costs. Importantly, compared to non-Monitor firms, those with Monitors witness a decline in innovation, likely due to their investment in potentially less risky projects. These findings provide suggestive evidence for why managers may forsake their commitment to

[39] Results are presented in table IA6 in the internet appendix.

TABLE 8
Impact of a Corporate Monitor on Future Innovation

	Innovation (Patent Count) (1)	Innovation (Patent Value) (2)	R&D Expense (3)
Post Infraction	−0.001	0.011	0.003
	(−0.007)	(0.058)	(0.673)
During Probation	0.131	0.125	0.006
	(0.666)	(0.482)	(1.139)
Post Probation	0.433	0.515	0.006
	(1.504)	(1.345)	(0.774)
Treat × Post Infraction	−0.064	−0.299	−0.009
	(−0.297)	(−0.985)	(−1.642)
Treat × During Probation	−0.073	−0.185	−0.011*
	(−0.263)	(−0.458)	(−1.703)
Treat × Post Probation	−0.569*	−0.824*	−0.012
	(−1.779)	(−1.682)	(−1.568)
Observations	2,862	2,862	1,759
Adjusted R^2	0.875	0.862	0.795

This table presents coefficient estimates for changes in measures of innovation for N/DPA-firms that were assigned a Corporate Monitor, using a difference-in-differences specification. The sample period is from 2000 to 2019. The dependent variable in each column is a different measure of innovation. In column 1, it is measured as the count of patents for which the firm applied in a given year. In column 2, it is the annual sum of patent innovation as measured by Kogan et al. [2017]. In column 3, it is the R&D expense scaled by average total assets in a given year. Column 3 only includes firm-year observations for which a firm has nonmissing R&D expense. *Treat* takes the value of 1 for the firms assigned a Corporate Monitor and 0 otherwise. All specifications include firm control variables *Size*, *Leverage*, *Return on Assets*, *Change in Intangibles*, *Market-to-Book Ratio*, *Employee Variability*, and firm and year fixed effects. *t*-statistics are shown in parentheses below the coefficient estimates. Standard errors are clustered by firm. To mitigate the effects of extreme observations, all continuous control variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Please see appendix B for a description of the variables. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed).

ethics and compliance norms. Such commitments can restrict a firm's risk-taking activities, decreasing R&D investments and innovation.

7.3 OTHER BENEFITS OF MONITORS

Our analyses thus far indicate that Monitors are associated with lower violations in the short run only, and their influence works through changes in ethics and compliance norms. In this section, we explore other benefits of Monitors, including whether they have spillover effects in instituting other types of norm changes or if their presence is associated with less severe future violations (as measured by penalties).

We evaluate whether firms with Monitors witness improvements along other dimensions of culture, including teamwork and quality norms. Improved ethics and compliance norms may improve employees' motivation, productivity, and collaboration, thereby leading to better team norms at the firm. Such improvements may also have spillovers in overall product quality as employees strive for excellence. To test this, we reestimate our main specification using the Li et al. [2021] measures of *Teamwork* and *Quality*. Our results indicate that firms with Monitors show an improvement in *Teamwork* during the term of the Monitor, but this improvement does not persist.

Interestingly, Monitor firms also show improvements in *Quality* in the long run, suggesting that gains in ethics and compliance norms may be associated with future improvements in quality.[40]

We also assess whether the consequences of future prosecution are likely to be less severe for treated firms by studying whether future penalties per violation are lower for these firms. Specifically, we conduct an additional difference-in-differences analysis where the dependent variable is the natural logarithm of the average penalty paid by firms per violation in a given year. The benchmark period in this analysis is before the Monitor is on site and before the DOJ investigation began. That is, we exclude the *Post Infraction* period from the benchmark to assess whether penalties are higher after the Monitor exits, relative to before the violation was uncovered. We find no evidence that firms with Monitors pay lower penalties in the post-probation period relative to other firms.[41]

7.4 ATTENTION BY OTHER GOVERNMENT AGENCIES

We conduct additional analyses to examine whether reduced vigilance by government agencies during the probation period could be driving our results. These agencies may view the Monitor as a substitute for their monitoring and thus be less vigilant while the Monitor is on site, resulting in a drop in detected violations. Once the Monitor leaves, the vigilance of the government agencies might increase to prior levels. We conduct two additional analyses to evaluate this alternative explanation.

First, we assess whether firms with Monitors face less oversight from the SEC or shareholders. Specifically, we create an indicator *Parallel Litigation* equal to 1 if the firm is subject to parallel civil litigation by other agencies (typically the SEC) or a shareholder lawsuit, and 0 otherwise. We compare the means of *Parallel Litigation* for the control and treated firms and find that they are not significantly different.[42] Specifically, 92.3% of treated firms and 87.2% of control firms undergo parallel litigation due to their misconduct, and the difference is not significant ($p = 0.4036$).

Second, to further assess changes in vigilance by government agencies, we evaluate whether the EPA conducts fewer inspections during the tenure of the Corporate Monitor, using the EPA's ECHO database to count the yearly inspections. In table 9, we document no significant differences in the rate of annual EPA inspections (measured as the log of EPA inspections plus 1) between treated and control firms while the Monitor is on site (column 1).[43] This no-result holds if we limit the sample to only firms that ever have an EPA inspection during our sample period (column 2).

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[40] The results of this analysis are presented in table IA7 of the internet appendix.

[41] These results are presented in IA8 of the internet appendix.

[42] Some firms are missing the data in the CPR to create this variable. The means are not significantly different if we drop these firms, code them all as 1, or code them all as 0.

[43] We winsorize this measure by year at 1% and 99% to control for extreme observations. For instance, Chevron has more than 6,000 inspections in one year.

TABLE 9
Corporate Monitors and EPA Inspections

	Inspections (1)	Inspections (2)
Post Infraction	0.038	0.130*
	(0.913)	(1.908)
During Probation	0.065	0.199*
	(1.057)	(1.892)
Post Probation	0.083	0.262**
	(1.246)	(2.199)
Treat × Post Infraction	−0.029	−0.147
	(−0.458)	(−1.156)
Treat × During Probation	−0.093	−0.265
	(−1.244)	(−1.605)
Treat × Post Probation	−0.032	−0.221
	(−0.421)	(−1.334)
Observations	2,987	1,558
Adjusted R^2	0.960	0.947
Sample	All	Only EPA

This table presents coefficient estimates for changes in EPA inspections for N/DPA-firms. *Treat* takes the value of 1 for the firms assigned a Corporate Monitor and 0 otherwise. The dependent variable is the log of EPA inspections plus one. EPA inspections data are collected from the EPA's ECHO database. In column 1, all firm-year observations are included, whereas in column 2, only firms which ever have an EPA inspection during the period of our sample are included. All specifications include firm control variables *Size*, *Leverage*, *Return on Assets*, *Change in Intangibles*, *Market-to-Book Ratio*, *Employee Variability*, and firm and year fixed effects. *t*-statistics are shown in parentheses below the coefficient estimates. Standard errors are clustered by firm. To mitigate the effects of extreme observations, all continuous control variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Please see appendix B for a description of the variables. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

The results in this section suggest that other government agencies do not change their vigilance levels in response to Monitor assignments. Although we only test for changes in oversight by some government agencies, our findings are suggestive. They do not support the alternative explanation that firms with Monitors are less likely to be subject to alternative regulatory scrutiny.

8. Discussion and Conclusion

We examine the role of a relatively new type of external firm monitor: a government-appointed on-site Corporate Monitor. We assess whether Corporate Monitors help reduce future corporate misconduct using the setting of deferred and nonprosecution agreements. All N/DPAs require changes to a firm's controls and compliance programs. However, only a subset requires the firm to engage an independent Corporate Monitor to oversee these changes.

We find that the appointment of a Monitor positively relates to the severity of the infraction (measured by the total payment required), mandated board changes, and requirements for cooperation. We also find that firms with better-perceived governance at the time the N/DPA is signed are less

likely to be appointed a Monitor, as are firms that voluntarily disclose evidence of wrongdoing to an enforcement agency. These results are consistent with the DOJ placing Corporate Monitors where they are perceived to be the most needed.

We further test whether the presence of a Corporate Monitor is associated with a reduction in law violations by using a difference-in-differences design. Relative to non-Monitor N/DPA firms, we find that N/DPA firms with Monitors experience a 18%–25% reduction in violations while the Monitor is on site. However, this reduction does not persist beyond the tenure of the Corporate Monitor. These short-term results allow us to better tie the change in violations to the Monitor's presence at the firm. Because the Monitor's primary mandate is to adopt and implement ethics and compliance programs, we also test whether this temporary reduction in violations is associated with equally temporary improvements in the firm's commitment (genuine or purported) to improve ethics and compliance norms. We use machine learning and unscripted earnings conference call transcripts to measure ethics and compliance norms. We find that although the commitment to ethics and compliance improves while the Monitor is on site, it returns to pre-N/DPA levels once the Monitor departs. Based on structural mediation analyses, we find that Monitors influence violations through the channel of ethics and compliance, suggesting that at least some of the commitment to improving ethics and compliance norms is genuine. We further provide suggestive evidence for why managers may abandon their commitment to ethics and compliance once the Monitor departs—Monitors are costly not only in terms of direct expenses, but also in indirect ways. Specifically, we find that firms under Monitorships experience a reduction in innovation that persists post-Monitorship.

Our results suggest that, on average, the presence of a Corporate Monitor is associated with short-term improvements to N/DPA firms that do not generally translate to reforming these firms in the long term. Failure to oversee lasting improvements to ethics and compliance programs is an important reason for Monitors' limited effectiveness in reducing repeat misconduct. Our results are timely in light of the recent activity by Deputy Attorney General Monaco in reforming Monitorships by directing prosecutors and various DOJ Sections to make public the selection criteria and appointment process to instill greater transparency in Monitor selection, and to ensure the Monitor's responsibilities and scope are well defined within the N/DPA (Monaco [2022]). In light of our findings, such transparency efforts would allow investors and other stakeholders to evaluate the benefits of Monitors relative to their high costs, potentially influencing their decisions related to the firm.

Furthermore, although we find that Monitors do not have a lasting impact on average, our results related to Monitor characteristics indicate that experience and the duration of the Monitor's presence may have important implications. In cases where Monitors have prior Monitorship experience

or a longer tenure, improved ethics and compliance norms persist beyond the Monitor's tenure at the firm.

Our findings contribute to a growing literature on corporate criminal misconduct and the efficacy of outside monitors. Although compliance and corporate governance changes are traditionally initiated by the board of directors or the shareholders, we highlight a relatively new mechanism for these changes and provide the first large-sample empirical evidence of its effectiveness. As we find that Monitors provide only limited benefits with respect to repeat misconduct, our study underscores a need for greater transparency to ascertain whether these benefits justify the significant costs associated with the Corporate Monitor. We look forward to future research that explores various aspects of Corporate Monitorship, particularly the factors that contribute to the effectiveness of Monitorships.

APPENDIX A: DESCRIPTION OF VIOLATIONS

Violation Type	Description	Overseeing agency
Accounting	Accounting violation	Securities and Exchange Commission; State Attorney General; Justice Department Criminal Division; Commodity Futures Trading Commission; U.S. Attorney
Antitrust	Civil contempt; price-fixing or anticompetitive practices	State Attorney General; Justice Department Antitrust Division; Justice Department Criminal Division; Federal Trade Commission; U.S. Attorney; Securities and Exchange Commission
Banking	Anti–money-laundering deficiencies; bankruptcy professional violation; data submission deficiencies; discriminatory practices; financial institution supervision failures; foreign exchange market manipulation; insurance violation; interest rate benchmark manipulation; mortgage, student loan, and toxic securities abuses; other banking violation	Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency; Justice Department Criminal Division; Commodity Futures Trading Commission; Federal Reserve; Securities and Exchange Commission; State Attorney General; New York Department of Financial Services; National Credit Union Administration

Violation Type	Description	Overseeing agency
Consumer protection	Consumer protection violation; food safety violation; motor vehicle safety violation; privacy violation; product safety violation	State Attorney General; Federal Motor Carrier Safety Administration; Consumer Financial Protection Bureau; Federal Trade Commission; National Highway Traffic Safety Administration; Consumer Product Safety Commission
Drug or medical	HHS civil monetary penalties; drug or medical equipment safety violation; off-label or unapproved promotion of medicine; violation of Controlled Substances Act, Medicare Coverage Gap Discount Program, or Medicare Parts C and D Enforcement Action	State Attorney General; U.S. Attorney; Centers for Medicare & Medicaid Services; Health & Human Services Department; Drug Enforcement Administration; Food and Drug Administration; Justice Department Civil Division
Economic sanction	Economic sanction violation	Office of Foreign Assets Control; State Attorney General; Justice Department Criminal Division; New York Department of Financial Services; Federal Reserve
Employment-related	Family and Medical Leave Act violation; benefit plan administrator violation; child labor or youth employment violation; employment discrimination and screening violation; labor relations violation; wage and hour violation; work visa violation; workplace safety or health violation; workplace whistleblower retaliation	Occupational Safety & Health Administration; National Labor Relations Board; Labor Department Wage and Hour Division; Mine Safety & Health Administration; Equal Employment Opportunity Commission; Office of Federal Contract Compliance Programs; Employee Benefits Security Administration
Environmental	Offshore drilling violation; other environmental violation	Environmental Protection Agency; State Attorney General; Bureau of Safety and Environmental Enforcement; Pipeline and Hazardous Materials Safety Administration; Justice Department Environment and Natural Resources Division; U.S. Attorney
Export control	Export control violation	Bureau of Industry and Security; State Department Directorate of Defense Trade; U.S. Attorney

Violation Type	Description	Overseeing agency
FCPA	Foreign Corrupt Practices Act violation	Securities and Exchange Commission; Justice Department Antitrust Division; Justice Department Criminal Division; U.S. Attorney
Fraud	Federal leasing royalty violation; tax violation; other fraud	State Attorney General; Justice Department Civil Division; Justice Department Criminal Division; Justice Department Tax Division; U.S. Attorney; Interior Department Office of Natural Resource; Securities and Exchange Commission; New York Department of Financial Services
Investor protection	Insider trading; securities issuance or trading violation; other investor protection violation	Securities and Exchange Commission; State Attorney General; Commodity Futures Trading Commission; Justice Department Criminal Division; U.S. Attorney
Kickbacks/ bribery	Kickbacks and bribery	State Attorney General; U.S. Attorney; Justice Department Civil Division and Criminal Division; Securities and Exchange Commission; Food and Drug Administration
Miscellaneous	Pipeline safety violation; premerger notification violation; railroad safety violation; telecommunications violation; tobacco litigation	Federal Railroad Administration; Federal Aviation Administration; State Attorney General; Federal Communications Commission; National Highway Traffic Safety Administration

APPENDIX B: VARIABLE DEFINITIONS

Variable Name	Description	Source
Preagreement measures		
Remedial Measures	A 0 or 1 indicator of whether the firm subject to the N/DPA has agreed to undertake further remedial measures as part of the N/DPA. 1 if it has agreed to further remedial measures, 0 otherwise	N/DPA hand collection
Employee Changes	A 0 or 1 indicator of whether the firm subject to the N/DPA undertook changes in its employees and officers prior to the N/DPA, but after the infraction was discovered. 1 if it terminated its employees and/or officers engaged in the infraction, 0 otherwise	CPR; N/DPA hand collection
Voluntary Disclosure	A 0 or 1 indicator of whether the firm voluntarily disclosed its wrongdoing to the DOJ. 1 if it disclosed the violation voluntarily, 0 otherwise	CPR; N/DPA hand collection
N/DPA Requirements		
Monitor	In the prediction model, an indicator equal to 1 if the N/DPA requires the retention of a corporate monitor, and 0 otherwise	CPR
Probation Length	Length of time (in months) the N/DPA is effective	CPR
Total Payment	The decile of the total amount the Department of Justice requires the firm pay as part of the N/DPA, ranked from 0 to 9 and divided by 9, such that the scale is from 0 to 1. This payment includes the fine, any forfeitures/disgorgements, and restitution payments	CPR
FCPA	An indicator equal to 1 if the primary violation in the N/DPA was a Foreign Corrupt Practices Act (FCPA) violation, and 0 otherwise	CPR
Prior Violations of Same Type	An indicator equal to 1 when there are prior firm violations of the same type as the N/DPA primary violation, and 0 otherwise. This indicator is based on the period prior to the N/DPA date (beginning in 2000) and excludes the violations included in the N/DPA.	CPR; GJF

Variable Name	Description	Source
Board Changes	An indicator equal to 1 if the N/DPA requires changes to the Board of Directors (including additional reporting requirements, committee creation, independent directors), and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Business Changes	An indicator equal to 1 if the N/DPA requires changes to the firm's business practices (i.e,. the nature and scope), and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Compliance Program	An indicator equal to 1 if the N/DPA requires the firm to implement or enhance a compliance program (including regarding corporate policy, communication and training, financial statements, bookkeeping, creation of a Chief Compliance Officer) and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Cooperation	An indicator equal to 1 if the N/DPA requires the firm to cooperate in future related investigations (including employee testimony, increased access to facilities, disclosure of activities, identifying witnesses), and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Board Monitoring	An indicator equal to 1 if the N/DPA requires the firm to engage in additional monitoring obligations that are ultimately the responsibility of the Board of Directors, and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Senior Management	An indicator equal to 1 if the N/DPA requires the firm's senior management to engage in additional oversight responsibilities and obligations, and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Waive Rights	An indicator equal to 1 if the N/DPA requires the firm to waive its or its agents' rights (including waiving its rights to the 6th Amendment, statute of limitation, admissibility, venue, indictment, disclosure), and 0 otherwise	Kaal & Lacine, 2014; N/DPA hand collection
Accounting Mandate	An indicator equal to 1 if the N/DPA imposes additional obligations on the firm with respect to accounting (including conducting reviews of its internal controls, implementing additional internal controls, hiring an external agent to conduct a review of its internal controls, ceasing use of an accounting alternative), and 0 otherwise	N/DPA hand collection

Variable Name	Description	Source
Violations	The log of one plus the count of violations for the N/DPA firm, any new parent (where new parent violations are included only after the date of acquisition), its subsidiaries, and its acquired subsidiaries (including violations of acquired subsidiary before acquisition). In panel A and panel B of Figure 3, the raw count of violations is used.	CPR; GJF
Treat	An indicator equal to 1 if the firm has an N/DPA which requires the retention of a corporate monitor, and 0 otherwise. This variable is not time-varying	CPR
Post Infraction	An indicator equal to 1 if the observation occurs after the infraction ended and before the N/DPA is effective, and 0 otherwise	CPR
Probation	An indicator equal to 1 if the observation occurs during the period in which the N/DPA is effective, and 0 otherwise	CPR
Post Probation	An indicator equal to 1 if the observation occurs after the N/DPA is effective, and 0 otherwise	CPR
Firm characteristics & other variables		
Size	The log of total assets	Compustat
Leverage	The sum of total debt in current liabilities and total long-term debt, scaled by total assets	Compustat
Return on Assets	The net income over the average total assets	Compustat
Change in Intangibles	The change in intangibles divided by average total assets	Compustat
Market-to-Book Ratio	The ratio of the market value of the firm to the book value of equity measured as of the end of the fiscal year	Compustat
Employee Variability	The coefficient of variation of the number of employees, five-year rolling average	Compustat
USA-based	An indicator equal to 1 if the firm is headquartered in the United States of America, and 0 otherwise	Compustat
Percentage of Independent Directors	Percentage of the Board of Directors that are considered independent in the year prior to the N/DPA date	ISS; hand collection from proxy statements/ annual reports
CEO is Chairman	An indicator equal to 1 if the firm's CEO was also the Chairman of the Board of Directors in the year prior to the N/DPA date and 0 otherwise. This is only a 1 if the CEO was the Chairman for a majority of the fiscal year	BoardEx; hand collection from proxy statements/ annual reports

Variable Name	Description	Source
New CEO	An indicator equal to 1 if the CEO changes between the infraction period and the year before the N/DPA agreement, and 0 otherwise	ExecuComp; hand collection from proxy statements/ annual reports
Ethics and Compliance (All)	Measure of a firm's ethics and compliance norms using the methodology developed by Li et al. [2021], including all earnings conference call transcripts available during the sample period	FactSet; (Li et al. [2021]) code
Ethics and Compliance (300+)	Measure of a firm's ethics and compliance norms using the methodology developed by Li et al. [2021], including only earnings conference call transcripts with 300 or more words available during the sample period	FactSet; (Li et al. [2021]) code
Innovation (Patent Count)	The natural log of the count of patents plus 1 in a given firm year	(Kogan et al. [2017]) patents data
Innovation (Patent Value)	The natural log of the sum of patent innovation value (as measured by Kogan et al. [2017]) plus 1 in a given firm year	Kogan et al. [2017] patents data
R&D Expense	The sum of research and development expenses (Compustat variable XRD) scaled by average total assets in a given firm year	Compustat
EPA Inspections	The natural log of EPA inspections conducted at a firm location plus one in a given firm year	EPA Enforcement & Compliance History Online Database
Restructuring	An indicator equal to 1 if the firm has positive restructuring charges (Compustat variables RCA, RCD, RCEPS, and RCP) during the year, and 0 otherwise	Compustat

APPENDIX C: TEXT-BASED MATCHING METHODOLOGY

This section provides a description of the methodology to perform text-based matching which is used in section 5. Following Mozer et al. [2020], we use a "bag-of-words" approach to construct Term Document Matrices (TDM), which are scaled according to the TFIDF weighting and create matches using cosine similarity (Salton and Michael [1986], Salton [1991]).[44] The TFIDF is the product of the TF and the inverse-document frequency (IDF) calculated as follows:

$$TFIDF(t, d, D) = TF(t, d) \cdot IDF(t, D),$$

[44] A TDM is a representation of documents as vectors of terms, where the rows in the matrix are the terms and the columns are each document in the corpus. The cells within the matrix are the weights of each term for that document-term pair.

where TF is a function of the term t and the document d, and IDF is a function of the term t and the set of documents D. TF measures how many times a word appears in a document relative to all the words in a document:

$$TF(t, d) = \frac{f_{t,d}}{\sum_{t' \in d} f_{t',d}}.$$

The IDF measures the inverse of the proportion of documents in which a term appears throughout the corpus. It is calculated as follows:

$$IDF(t, D) = log \frac{|D|}{|\{d \in D : t \in d\}|}$$

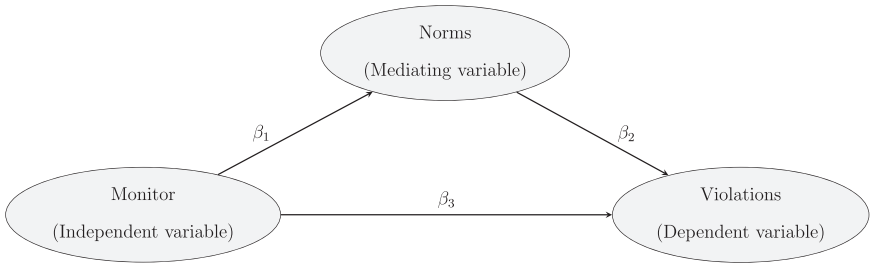
The IDF gives a higher value to words which appear less frequently in the corpus. Thus, the product of TF and IDF helps us to identify how important a word is to a specific N/DPA. Common words which appear in all documents will receive less weight. This facilitates better matches among documents by identifying the most relevant elements of the N/DPA. Once the TDMs are constructed using TFIDF, we compare the treated and control TDMs using cosine similarity. That is, we calculate the cosine similarity as follows:

$$Cosine\ Similarity = \frac{T_n \cdot C_m}{\| T_n \| \| C_m \|},$$

where T_n and C_m are the vectors of words for the nth treated firm's N/DPA and mth control firm's N/DPA being compared, respectively. The cosine similarity is higher when the N/DPAs use the same words with similar relevance within the document. A score of 1 indicates the two vectors are identical. After calculating these pair-wise scores, we create matches in two ways. First, we match treated-control pairs based on the highest cosine similarity score, without replacement, while maximizing the average cosine-similarity score. This matching method attempts to find the best comparison N/DPA for each treated firm among the control firms. Second, we remove all firms (treated or control), which have no close matches in the sample. This matching method reduces our sample size by fewer observations, while only maintaining N/DPAs which are relatively similar in terms of remedial requirements.

APPENDIX D: STRUCTURAL MEDIATION ANALYSIS

This figure presents the path analysis of the relations between Monitor assignment, corporate norms, and legal violations. The indirect effect is measured as $\beta_1\beta_2$ whereas the direct effect is given by β_3.



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