Can Enhanced Risk Information Increase Misconduct? Evidence from Mandated Enterprise Risk Assessments

Robert Hills
Pennsylvania State University
roberthills@psu.edu

Paul Hribar
University of Iowa
Paul-hribar@uiowa.edu

Trent J. Krupa
University of Arkansas
tkrupa@uark.edu

April 2025

Keywords: enterprise risk management; operational misconduct; limited attention

JEL Codes: G22; G32; G38

Data Availability: Data used in this study are available from public sources identified in the paper.

We are grateful for financial support from our respective institutions. This paper has benefitted from conversations with several industry professionals, as well as helpful comments from Kris Allee, Abigail Allen, Brian Bratten, Kathryn Brightbill, Michael Crawley, Devon Erickson, Petrus Ferreira, Kurt Gee, Todd Kravet, Brian Monsen, Fellipe Raymundo, Lynn Rees, Chad Simon, Chris Skousen, Jane Song, Andrew Stephan, Frances Tice, Mohan Venkatachalam, James Warren, Braden Williams, and participants at the 2025 Arkansas Accounting Research Conference and Utah State University.

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Abstract

Managers face information processing constraints, which can lead them to misjudge the direct and indirect costs associated with operational misconduct. We examine the staggered implementation of Own Risk and Solvency Assessment (ORSA) mandates in the U.S. insurance industry, which require managers to systematically identify, assess, and integrate firm-wide risks into operational decisions. By requiring firms to acquire and process this information, ORSA plausibly reduces uncertainty about the costs of misconduct. Using a stacked difference-in-differences design, we find that ORSA is associated with an increase in operational misconduct among public U.S. insurers by six percentage points. The effect is more pronounced in complex firms and those with prior misconduct, suggesting that improved risk assessment enhances managers' cost-benefit analyses of misconduct. We rule out improved regulatory detection as an alternative explanation. Our findings suggest that penalty uncertainty acts as a deterrent to misconduct; once managers quantify these costs, the deterrent effect weakens. Paradoxically, rather than curbing misconduct, better risk information may enable managers to exploit it strategically.

1. Introduction

Firms operate in complex and dynamic environments, navigating a network of regulations spanning multiple jurisdictions and activities. Certain operational practices increase the risk of regulatory non-compliance and may constitute corporate misconduct. A growing body of accounting research investigates the underlying incentives and institutional factors that contribute to corporate misconduct, leading to valuable insights into its determinants (e.g., Caskey and Ozel 2017; Heese and Pérez-Cavazos 2020; Gallo et al. 2023; Raghunandan 2024). However, an important question remains: to what extent are managers capable of assessing the full potential costs and, consequently, the net benefit from activities that result in misconduct?

Direct penalties associated with regulatory violations are often low, stymied by statutes that limit regulators' ability to match fines with the economic magnitude of the underlying misconduct (Raghunandan 2024). Thus, operational misconduct may be less costly to firms than taking alternative actions to avoid it. However, corporate misconduct can engender severe indirect penalties, including the potential for lawsuits, increased political scrutiny, media attention, and negative reputational effects among the firm's customers, employees, and other stakeholders (Raghunandan 2021; Heese et al. 2022; Raghunandan 2024; Chircop et al. 2025). Given the indirect nature of these penalties, the ambiguity of the consequences of misconduct, and managers' limited ability to attend to and process all relevant information (Simon 1973, 1979; Sims 2003; Camerer and Malmendier 2007), it is unclear whether managers form precise expectations for the costs and benefits of operational misconduct.[1]

[1] As we discuss throughout the paper, we refer to operational activities that expose the firm to regulatory violations as *operational misconduct.* We define operational misconduct as the firms' operational activities that generate positive returns, but potentially expose the firm to regulatory violations. For example, a manufacturer would generate positive returns from cutting costs and increasing production but may expose the firm to safety and employment violations. A defining characteristic of operational misconduct is that it is *possible* to generate positive operational benefits from these activities. This compares to violations that are purely incidental in nature and are not associated with activities

Research finds that strong internal and external monitoring reduces the likelihood of operational misconduct (e.g., Heese and Pérez-Cavazos 2020; Cohn et al. 2021; Heese et al. 2022; Gallo et al. 2023; Heese and Pacelli 2024), suggesting that, on average, operational misconduct generates negative NPV. Yet other research indicates that increased misconduct often arises when managers seek to cut costs or meet earnings benchmarks (e.g, Caskey and Ozel 2017; Raghunandan and Ruchti 2024; Ferguson et al. 2024). These findings suggest that managers may view the direct financial benefits associated with increased operational misconduct as outweighing the potential direct and indirect costs associated with subsequent violations, at least in the short term. However, the extent to which managers explicitly identify and enumerate the costs of engaging in misconduct is largely unanswered (Raghunandan and Ruchti 2024).

Research in other disciplines frequently demonstrates that penalties serve as a deterrent to misconduct by imposing clear consequences for rule violations (e.g., Becker 1968). However, the effect of these penalties on behavior becomes more nuanced when ambiguity or uncertainty is introduced. For example, some research suggests that when individuals are uncertain about the severity or likelihood of potential risks, they may overestimate them, leading to a more cautious approach and reduced misconduct (Nagin 1998). Conversely, when costs are explicitly defined, individuals can more precisely assess the cost-benefit tradeoff of engaging in misconduct (Gneezy and Rustichini 2000; Loewenstein et al. 2001). This suggests a potential paradoxical effect: increasing awareness of both direct and indirect penalties is often assumed to enhance deterrence yet requiring individuals to explicitly learn and enumerate the potential financial and legal consequences of misconduct may, in some cases, make misconduct seem more worthwhile. Consequently, greater certainty about the consequences—especially if perceived as insufficiently

of the core business. For example, a hazard that could result in a slip and fall incident is likely to be mitigated under any circumstance (e.g., there is a near zero probability of positive NPV from not mitigating this risk).

severe—may actually increase the likelihood of misconduct rather than suppress it.

To provide new evidence on how managers evaluate and tradeoff risks from operational misconduct, we exploit the staggered introduction of Own Risk and Solvency Assessment (ORSA) requirements in the U.S. insurance industry between 2013 and 2017. ORSA mandates that insurers implement enterprise risk management (ERM) programs that lead managers to better identify, assess, and integrate firm-wide risks into strategic decisions (Krupa 2024). We use this setting to examine how managers change operational practices (claims and underwriting activities) that result in violations with state insurance regulators (hereafter referred to as operational misconduct) as they better assess the likelihood and magnitude of regulatory risks, including their interaction with other key risks (e.g., operations, reputation, investment).

This research setting offers a distinctive opportunity to investigate two key questions: (1) whether information processing constraints and limited attention leads managers to misjudge the risks vs benefits of operational misconduct, and (2) how the complete assessment of the risks compares to managers' initial assessment under these constraints. If managers initially underestimate the likelihood and severity of indirect penalties, better information is likely to deter misconduct (March and Shapira 1987; Ben-David et al. 2013). Alternatively, if managers are ambiguity adverse and systematically overestimate certain negative outcomes (Schmeidler 1989; Gilboa and Schmeidler 1989; Klibanoff et al. 2005), acquiring more precise information could reveal that the net benefits of misconduct surpass these risks, resulting in increased misconduct.

ORSA's staggered adoption across states, along with a $500 million exemption threshold, enables us to implement a staggered difference-in-differences (DiD) research design with control groups that include insurers that are previously treated, will be treated in the future, and smaller insurers that are never treated. We use a stacked cohort regression and find that following ORSA,

public U.S. insurers *increase* operational misconduct, as measured by the incidence and frequency of state insurance violations as captured by Good Jobs First's (GJF) Violation Tracker. In terms of economic magnitude, information improvements from ORSA are associated with a 6.5 (10.3) percentage point increase in the likelihood (frequency) of operational misconduct. This result indicates that managers, on average, learn that risks from operational misconduct are lower than previously expected given limited information. Importantly, this also indicates that managers perceive some potential net *benefits* (i.e., positive NPV) from engaging in operational misconduct.

Our DiD research design, with staggered implementation of the treatment effect, mitigates many threats to identification. A key identifying assumption in this DiD analysis is that, before the enactment of ORSA, firms exhibit parallel trends in the dependent variables between treatment and control. Using an event time analysis around the enactment of ORSA, we find parallel trends in insurance violations during the pre-ORSA period. We then find evidence that operational misconduct begins to increase approximately two years following ORSA, consistent with a lead time to change claims and underwriting activities and subsequently have those activities be identified by state insurance regulators.

We focus our analysis on insurance violations for two key reasons. First, in the insurance setting, insurance violations – a form of consumer-protection related offense - represent 85 percent of all violations. Second, unlike other industries, insurance companies are *unlikely* to realize direct benefits from other violation categories. For example, while a manufacturer can benefit from activities that result in environmental, employment, and safety related violations, such as increased production, these violations are far more likely to represent incidental events for insurers that are expected to be fully minimized as they do not progress insurers' business objectives. Instead, insurance violations represent claims and underwriting practices that attempt to minimize cash

outflows while maximizing premiums received by the insurer, skirting up against boundaries set by the state insurance regulators. Therefore, insurance violations constituting operational misconduct present the potential for a positive NPV if the benefits outweigh the costs.

We test this assertion with a falsification test that examines the effect of ORSA on all other non-insurance (i.e., non-operational) violations. As expected, ORSA has a negative and insignificant effect on other, non-insurance violations. This is consistent with non-insurance violations resulting in negative NPV under any circumstance, thus regardless of information processing constraints, managers will always want to minimize exposure to these violations. This analysis also provides additional comfort that we are not picking up another confounding event that results in an increase in all identified misconduct.

An important institutional factor in our identification strategy arises from ORSA's specific reporting requirements. ORSA requires insurers to submit an annual Summary Report only to their lead state regulator, defined as the state in which they conduct the majority of their business (NAIC 2023). This report outlines the firm's principal risk exposures, management's assessment of these risks, and a summary of the ERM process for aggregating and communicating risk information to senior executives and the board of directors. However, ORSA does not require detailed reporting of the metrics or calculations underlying the ERM system. Consequently, compliance with ORSA is unlikely to furnish regulators with the granular information (i.e., road map) needed to detect specific regulatory infractions, making it improbable that ORSA enhances a regulator's ability to identify violations. We corroborate this view through discussions with practitioners who shared additional insights regarding the content of a prior ORSA summary report.

To empirically demonstrate that Summary Reports submitted to lead state regulators do not mechanically facilitate the identification of violations, we examine the frequency and severity of

insurance violations in the insurer's lead state compared to other states where the insurer operates. If ORSA documentation were driving our results, we would expect effects to be concentrated in the lead state. However, our findings reveal the opposite: an increase in violations in states not receiving the ORSA Summary Report, while the effect in the lead state is positive yet statistically insignificant. This pattern contradicts the notion that ORSA documentation mechanically provides a road map for regulators to identify violations. Instead, it suggests that managers' information acquisition and enhanced understanding about the costs vs benefits of operational misconduct, which arises throughout the ERM implementation process, may be responsible for our results.

To investigate whether a managerial learning mechanism is responsible for our results, we conduct two cross-sectional analyses. First, if our results are consistent with an underlying learning channel, we expect the effect of ORSA on misconduct will be greater for firms that face greater ex ante information processing costs. To test this, we split ORSA treated firms by high versus low firm complexity, measured as the average file size of a firm's 10-K (Loughran and McDonald 2016). We expect that greater complexity is associated with higher frictions in acquiring, assessing, and integrating risk information (Krupa and Mullaney 2024). Consistent with a learning channel, we find a 11.3 (17.6) percentage point increase in the likelihood (frequency) of insurance violations within more complex firms. We fail to find an effect within low complexity firms.

Second, we expect that mandated risk assessments will lead managers to increase operational misconduct when such activities likely benefit the firm. Firms with insurance violations before ORSA implementation have a revealed preference for activities involving misconduct, even if managers did not precisely understand or estimate all associated costs versus benefits. If ORSA enhances managers' understanding of these costs and benefits, these effects of ORSA implementation should be most salient for firms already inclined toward misconduct. In

other words, the enhanced information collection and risk assessment analysis resulting from ORSA may alleviate information frictions that previously constrained even greater misconduct. Consistent with this expectation, we find that firms with prior insurance violations experience a significant increase in both the likelihood (10.7 percentage points) and frequency (19.5 percentage points) of operational misconduct following ORSA. Conversely, we find no effect among firms without prior violations. These findings suggest that mandated risk assessments primarily increase misconduct in firms already predisposed towards such behavior, as improved risk information reduces managers' uncertainty about the net benefits of misconduct.

Next, to contextualize our findings, we conduct three additional analyses. First, we investigate whether managers increase operational misconduct to boost firm performance when other risk-taking activities are curtailed. Thus, we partition firms into those that increase versus decrease risk following ORSA implementation. Our findings reveal that the increase in operational misconduct is concentrated among firms that *reduce* overall risk, suggesting managers may resort to misconduct as an alternative mechanism to generate returns when high-risk investment opportunities are limited.

Second, if the increase to operational misconduct occurs as managers make more risk-informed decisions, then it is likely that managers also modify the set of actions that generate violations, favoring those that are less costly if identified by a state insurance regulator. Consistent with this expectation, we find that revealed post-ORSA violations are less value eroding. Third, we examine an extended post period analysis to evaluate the relative persistence of increased violations following ORSA. Results indicate that violations remain increased for more than five years following improvements to risk information. This finding is consistent with our conceptual framework and mitigates the concern that enhanced risk information results in managers "coming

clean" (i.e., whistleblowing) to regulators. This alternative explanation would likely indicate a short-term increase in violations, only to revert to the mean, or even decrease, in the longer-term.

Although a benefit of our ORSA setting is that it engenders plausibly exogenous variation, a caveat is that a focus on the insurance industry may limit generalizability. Nonetheless, public U.S. insurers face similar indirect risks from regulatory misconduct as other industries (e.g., reputational concerns, political scrutiny, lawsuits). Moreover, insurers are important, representing a $1.4 trillion component of the U.S. economy (Insurance Information Institute 2022) and are often used to study effects that cannot be examined elsewhere (Petroni 1992; Petroni and Shackelford 1995; Gaver and Paterson 2001, 2004, 2007; Hepfer et al. 2020; Krupa 2024).

Our study makes several contributions. First, it adds to the literature on information processing constraints and limited attention. While extensive research examines limited attention among investors (e.g., DellaVigna and Pollet 2009; Hirshleifer et al. 2009; Hirshleifer et al. 2011; Blankespoor et al. 2019; Engelberg et al. 2020), fewer studies examine limited attention among managers. Our findings address this gap, suggesting that mandated enterprise risk assessments change the extent of operational misconduct. This suggests managers are likely to face information processing constraints, leading to imprecise assessments about the cost and benefits of misconduct. However, implementing enterprise-wide risk assessments introduce novel information (Blankespoor et al. 2020), leading managers to reassess the net benefits of misconduct.

Second, we contribute to research on the determinants of corporate misconduct (Raghunandan 2021; Yost and Yu 2023; Chircop et al. 2025; Heese and Pacelli 2025). While misconduct may offer firms short-term benefits, it also carries costs, including litigation, regulatory scrutiny, media attention, and reputational damage (Raghunandan 2024). Prior studies show that firms reduce misconduct when costs increase (Heese and Pérez-Cavazos 2020; Heese et

al. 2022; Gallo et al. 2023; Heese and Pacelli 2024), and increase misconduct when benefits increase (Caskey and Ozel 2017). We examine misconduct not as a response to changing costs or benefits but as a reaction to improved managerial awareness of these factors. Our results suggest that managers' revised assessments drive increased operational misconduct.

Finally, we contribute to research on ERM systems. Unlike traditional risk management or enterprise resource planning systems (ERP) aimed at reducing risky activities (Beasley et al. 2016; Heese and Pacelli 2025), ERM employs a top-down or enterprise view of risks, enabling managers to make better risk-informed decisions by assessing the holistic risks and benefits of specific actions.[2] Thus, whether ERM increases or decreases specific risk actions depends on the assessed costs versus benefits. Along these lines, we show that mandated ERM implementations among public insurers are associated with an *increase* in operational misconduct, suggesting these insurers may derive net benefits from such misconduct.

2. Background and Hypothesis Development

2.1 Setting: ORSA and Mandated Enterprise Risk Management

The global financial crisis revealed significant shortcomings in the risk management practices of U.S. insurers, prompting regulatory action. In response, the National Association of Insurance Commissioners (NAIC), the quasi-regulatory body in charge of U.S. insurance regulation, launched the "Solvency Modernization Initiative" to evaluate and improve the governance and risk management framework in the industry (Cummins and Phillips 2009; NAIC 2012). As part of this initiative, the NAIC issued the ORSA Guidance Manual in 2011, followed

[2] Heese and Pacelli (2025) examine the effect of staggered facility-level enterprise resource planning (ERP) system implementations on corporate misconduct. They hypothesize that ERP adoptions are expected to reduce risky actions because managers can better identify and monitor employees actions, resulting in a decrease in misconduct, and find evidence consistent with their predictions. Notably the key tension in their hypothesis is whether ERPs adoptions will have a negative or null effect on misconduct, the latter being possible if ERP adoptions are ineffective because users fail to effectively utilize the system and its technologies (Venkatesh et al. 2003).

by the Risk Management and ORSA Model Act (No. 505) in 2012 (NAIC 2023). These reforms introduced the Own Risk and Solvency Assessment (ORSA) requirement, mandating that insurers establish and document a formal ERM program that adheres to specified minimum standards to address deficiencies in risk governance. For example, while the insurer AIG had disclosed the existence of a formal ERM program prior to ORSA, its substantial losses on risky investments during the financial crisis were cited by the NAIC as a pivotal example underscoring the need for more robust ERM requirements (NAIC 2023). Unlike many industries that faced severe downside risk during the financial crisis, the insurance industry was uniquely positioned to respond to such reforms due to the strong pre-existing regulatory infrastructure.

Unlike traditional risk management, which delegates risk oversight to unit leaders within subdivided organizational structures, Enterprise Risk Management (ERM) employs a top-down or enterprise view of risks. Under this approach, management seeks to understand, manage and monitor risks from a holistic view of the organization (Beasley et al. 2016). This approach facilitates the assessment and integration of risks affecting multiple silos, optimizing enterprise-wide decision-making by considering risk and reward tradeoffs across organization units. Notably, the objective of ERM is not necessarily to reduce or eliminate risk, but to empower management to make better risk-informed decisions. By restructuring risk assessment and communication processes within the organization, ERM can alleviate information processing constraints that managers face when seeking to assess and understand risks. This can reduce managers' need to rely on heuristics or make assumptions about incomplete data to simplify the decision-making process (Sims 2003; Camerer and Malmendier 2007).

Krupa (2024) was the first to use the ORSA regulation setting in accounting research. He highlights that ORSA establishes a comprehensive framework for insurers to identify and prioritize

firm-wide risks, assess risk interdependencies, and embed risk management within strategic decisions. ORSA mandates that insurers articulate a risk appetite approved by their board of directors, develop processes to manage risks and implement controls, and establish mechanisms to continuously communicate risks to and between senior management and the board (Pwc 2011; NAIC 2014). ORSA requires insurers to evaluate risks across all potential sources, including credit, market, underwriting, and operational risks. This holistic approach to risk management required under ORSA moves insurers away from traditional, siloed risk management practices, which are often confined to individual departments, and promotes integrated risk assessments that transcend departmental boundaries (Power 2009; Pwc 2011). Importantly, these ORSA requirements provide the dual benefit of avoiding the traditionally endogenous nature of ERM activities while also mitigating the fluidity of ERM interpretation by imposing a specific set of standards within an organization (Krupa 2024).

Our anecdotal discussions with practitioners involved with ORSA in the U.S. insurance industry confirm that the process includes direct assessment of regulatory risks and interconnected risks, including reputation, political uncertainty, compliance, social media, pricing, unintended coverage, and recruitment and retention risks. A more complete understanding of these risks can provide managers with a more precise assessment of the NPV from operational misconduct. In Appendix A, Panel A, we include a heat map outlining the risks identified in a property & casualty insurer's 2014 Key Risk Report, prepared as part of ORSA compliance. In Panel B, we include an outline of the specially identified regulatory risk. While we redact information that may be considered proprietary, we highlight that this provides anecdotal evidence that, while the insurer identifies regulatory risks as a "medium" likelihood of occurrence, it also identifies the overall impact as "low," classifying reputation as a "Tier III operational risk."

Initially, the industry expressed concerns about ORSA compliance costs. In response, the NAIC introduced a $500 million premium threshold to exempt smaller insurers, ensuring that approximately 80 percent of U.S. insurance premiums fell within the regulation (Willis Re 2012). Procedurally, ORSA is regulated by an insurer's "lead state", which is typically its primary state of domicile, and requires an annual submission of an ORSA Summary Report.[3] This report includes: (1) a description of the insurer's risk management framework, (2) an assessment of risk exposure, and (3) a corporate-level evaluation of solvency under various risk scenarios (NAIC 2014). The Summary Report is intended to provide the state regulator with confidence that the *process* of ERM is occurring within the firm. However, it does not require insurers to reveal all specific information contained in the insurer's underlying ERM systems, processes, and decisions. This mitigates the concern that state regulators are fully aware of management's decisions regarding changing risk-reward tradeoffs around undertaking risky activities (Krupa 2024).

Importantly, while the NAIC issues regulatory standards, each state must adopt the standards into regulation. U.S. states subsequently adopted ORSA on a staggered basis between 2013 and 2021. Six states adopted ORSA in 2013, 13 in 2014, 15 in 2015, and 5 in 2016. To encourage the remaining states to adopt ORSA, the NAIC added ORSA to its Accreditation Program as a requirement for 2017. Accordingly, ten states adopted ORSA in 2017, and the District of Columbia and New Mexico adopted in 2019 and 2021 respectively.[4]

2.2 Hypothesis – Effect of ORSA on Corporate Misconduct

ORSA plausibly enhances firms' identification and assessment of firm-wide risks and their interdependencies, while being exogenous from other firm characteristics that could confound the

[3] ORSA is regulated by the insurer's lead state which can enact firm-wide financial regulations that influence activities of the entire enterprise (group).
[4] Krupa (2024) includes Appendix A which reports the states and regulatory codes associated with each adoption.

relationship between internal information, or governance attributes, and risk-related outcomes, such as corporate misconduct. Because managers face processing constraints, under a traditional management approach in which risk-related information is typically contained in silos, managers' capacity to identify, assess, and integrate such information is likely limited (Krupa 2024). This can cause managers to make assumptions about unavailable information or rely on simple heuristics to facilitate risk management decisions. The intent of ORSA is to facilitate firm-level changes away from a traditional siloed approach to risk management to a more holistic enterprise risk management approach. These changes are expected to improve both managers' risk-related information set and managers' capacity to process and understand the risk-related information, thereby allowing managers to make better risk-informed decisions.

Corporate violations, which represent corporate misconduct that has been detected and penalized, reveal that a firm engaged in risky activities leading to regulatory non-compliance (Chircop et al. 2025). Like other risky activities, firms may derive benefits from these activities. For example, an insurer may delay processing claims, deny claims without clear and reasonable explanations, or otherwise fail to communicate with policyholders regarding their claims. These activities improve the insurer's cash management by keeping premiums invested longer while also encouraging policyholders to accept potentially lower settlements. This can significantly reduce expenses and cash outflows, while increasing return on invested assets. However, they also expose the insurer to violations of state insurance regulations related to unfair claims practices. These violations result in direct fines and penalties and may also result in indirect costs such as political scrutiny, negative media attention, or other reputational damage among customers and employees.

If ORSA requirements force managers to accept processing costs which enhances their ability to make risk-informed decisions, ORSA may affect firms' likelihood of engaging in

misconduct. However, the directional effect of ORSA on misconduct is ambiguous, hinging on how a more precise assessment of the likelihood and magnitude of costs compares to managers' initial assessment under limited information. On the one hand, with increased uncertainty, managers may underestimate risks from misconduct (March and Shapira 1987; Ben-David et al. 2013). If ORSA leads managers to determine that corporate misconduct is more costly (relative to their benefit) than previously assessed, ORSA is expected to be negatively associated with misconduct. Along these lines, research suggests that stronger monitoring (both internal and external) is associated with a decrease in corporate misconduct (Heese and Pérez-Cavazos 2020; Cohn et al. 2021; Heese et al. 2022; Gallo et al. 2023; Heese and Pacelli 2025).

On the other hand, some theory suggests that ambiguity-averse managers may overweight the probability of unfavorable outcomes in the presence of ambiguity, and systematically overestimate certain negative outcomes (Tversky and Kahneman 1992; Halevy 2007). Therefore, increased precision in the estimated cost of misconduct may lead managers to believe that they've previously overestimated the costs (relative to benefits) of actions that lead to corporate misconduct. As such, ORSA may be associated with an increase in corporate violations.[5] Moreover, such a response is especially reasonable given that the penalties associated with misconduct are relatively minor (Ferguson et al. 2024), and such misconduct is generally not considered a newsworthy event, meaning that managers may not view corporate misconduct as engendering meaningful reputational concerns.

Overall, given the competing directional predictions about the effect of ORSA on corporate misconduct, we state our hypothesis in null form:

[5] A related line of literature in economics suggests that making penalties more precise can instead act as a "price." When there is a more certain price associated with negative social activities, individuals will *increase* the activity as they can decide to accept the more precise cost to the activity (Gneezy and Rustichini 2000).

H1: There is no association between ORSA and corporate misconduct.

3. Research Design and Sample Selection

3.1. Research Design

ORSA's state-by-state adoption, including an exemption threshold of $500 million in annual premium, results in three two-by-two comparisons: (1) the treatment group versus the never treated group (premium exemption), (2) the earlier treatment group versus the later treatment group (before treatment) as controls, and (3) the later treatment group versus the earlier treatment group (after treatment) as controls. Research highlights the potential for a negative weighting bias from the third comparison, potentially flipping coefficients if the effect of the treatment becomes stronger over time (Baker et al. 2022).

To eliminate this potential bias, we follow the suggestion of Baker et al. (2022) and implement a stacked cohort regression design as follows:

$$Y_{i,t,c} = \alpha + \beta_1 ORSA_{i,t,c} + \sum \beta_k \, CONTROLS + \gamma_{i,c} + \omega_{t,c} + \epsilon_{i,t,c} \quad (1)$$

This creates a separate group for each cohort c of annual ORSA implementation (firms that are first treated in 2013, then 2014, then 2015, etc.), creating additional observations for each treatment cohort.[6] For each cohort, observations associated with previously treated firms are removed, eliminating the negative weighting bias. Power from additional observations is absorbed using firm and year fixed effects interacted with each stacked cohort, $\gamma_{i,c}$ and $\omega_{t,c}$, respectively (Baker et al. 2022).[7]

[6] Firms treated during the first ORSA implementation cohort are compared to control firms that are never treated and firms treated in later periods. A different cohort is then created for each subsequent year of enactment, where the newly treated firms are compared with control firms that are never treated and firms that will be treated in subsequent periods. The firms that were treated in the previous year(s) are then eliminated from the subsequent cohort. See Gormley and Matsa (2011) for detailed discussion of the stacked cohort design.

[7] We follow prior literature examining misconduct and estimate this equation using ordinary least squares (OLS) (e.g., Heese et al. 2022; Heese and Pacelli 2024; Raghunandan 2024).

$Y_{i,t,c}$ represents our primary violation measures of interest. First, *Ins_Violation* represents an indicator variable equal to 1 if an insurance violation occurs during the firm-year, 0 otherwise. Second, we examine the relative frequency of violations by taking the natural log of one plus the number of insurance violations (*Ln(1+#InsViolations)*) (e.g., Heese et al. 2022; Heese and Pacelli 2024; Raghunandan 2024).

We identify corporate regulatory violations from the Violation Tracker database, created by the Corporate Research Project of Good Jobs First. Violation Tracker represents a comprehensive database of penalties issued by over 400 state and federal regulatory agencies in the U.S., which has been increasingly used in academic research (e.g., Heese and Pérez-Cavazos 2020; Yost and Yu 2023; Raghunandan 2024). We use Violation Tracker's parent-subsidiary linking table to link each subsidiary to the historic parent company at the time of the violation. We omit any violation without a historical CIK identifier. Because we are interested in *operational* misconduct for insurers, we focus our analysis on the incidence and frequency of insurance violations, where Violation Tracker indicates the primary nature of the offense as "insurance violation." Insurance violations represent state-level misconduct associated with an insurers' inappropriate handling of the claims, underwriting, or insurance contract process. This can include violations for inappropriate calculation of claims values, overcharging premiums, or otherwise misleading customers about the policy contract. For example, in 2011, Progressive Insurance was fined $30,000 by the Washington State Insurance Commissioner for inappropriately calculating salvage claims. In a larger case in 2010, UnitedHealth group was fined $5.05 million by the New York Department of Financial Services and ordered to refund $114.5 million to policyholders who were overcharged for health insurance premiums.

ORSA represents our primary independent variable of interest. *ORSA* is set to 1 for treated firms in the year that ORSA is enacted by the insurer's "lead state" regulator, and each subsequent year, 0 otherwise. For firms that report premiums less than $500 million, *ORSA* is set to 0.[8] The insurer's lead state regulator is typically the state in which the firm's headquarters is located (NAIC 2014). However, headquarter state regulators may agree to allow an alternative state to take the lead financial regulatory role if the firm maintains significant operational presence in said state. Following Krupa (2024), we first identify firm's primary headquarters location using Loughran and McDonald (2016) historic headquarters data. Next, we review the NAIC's listing of lead states.[9] If a firm's NAIC listed lead state differs from the headquarters state, we replace the lead state with this data. If we do not find information identifying a firm's lead state, then we retain the original HQ state as the insurer's lead state.[10] We follow Krupa (2024) and set the initial timing of *ORSA* based on the year of the year of regulatory adoption for the insurers' lead state.[11] β_1 captures the effect of ORSA on operational misconduct.

While ORSA mandates are plausibly exogenous to firms' misconduct, we include a vector of control variables that may be associated with both misconduct and managers' information environment (*CONTROLS*). These controls include basic characteristics such as firm size (*ln(ASSETS*)), premium growth (*GROWTH*), profitability (*ROA*), *LEVERAGE*, and investment opportunities (*TOBINQ*). Additionally, we adjust for the firm's earnings announcement speed (*IIQ*)

[8] Our independent variable *ORSA* is effectively a measure of *TREATMENT*POST*. However, the standalone coefficient on *TREATMENT* is absorbed by firm fixed effects and the standalone coefficient on *POST* is absorbed by year fixed effects.
[9] The listing is available at https://content.naic.org/public_lead_state_report.htm.
[10] The NAIC listing is not fully exhaustive as firms do not have to publicly disclose their lead state on this website. Still, the NAIC data cover approximately 80 percent of the insurers in our sample. To the extent lead states to not match our HQ location and are not otherwise captured by this process, this should add noise to the timing of our independent variable of interest.
[11] See Krupa (2024), Appendix A for a listing of state adoption year and corresponding regulation. In the subsequent years following the Krupa (2024) dataset, Washington DC adopted ORSA in 2019 and New Mexico adopted ORSA in 2021.

and existence of foreign earnings (*FOREIGN*), which may influence the complexity or quality of accounting information.[12] Finally, we adjust for potential changes to the firm's overall investment environment, including acquisitions (*ACQ*), capital expenditures (*CAPEX*), underwriting exposure (*PREMIUMS*), and annual stock market returns (*RETURN*). See Appendix A for variable definitions.

The staggered implementation of ORSA allows for year fixed effects to absorb the effect of macroeconomic trends that may affect all firms in any given year. Additionally, our use of firm fixed effects holds constant any time invariant firm characteristics, identifying within-firm changes to operational misconduct following ORSA mandates. We double cluster standard errors by both firm and lead state to account for clustering within a firm and because variation in treatment occurs at the state level (Bertrand et al. 2004).[13] All continuous variables are winsorized at 1 and 99th percentile to mitigate the effect of outliers.

3.2. Sample Selection and Descriptive Statistics

We use Compustat to identify public firms in the insurance industry between 2007 and 2019 (two-digit SIC = 63).[14] We begin in 2007 to establish a pre-period trend prior to the initial adoption of ORSA in 2013. We end our sample in 2019 to avoid the economic effects of the Covid-19 pandemic. This represents an unprecedented period of increased health insurance and death

[12] For example, research finds that firms risk information strategies may be associated with profitability (Baxter et al. 2013; Grace et al. 2015), value and investment opportunities (Hoyt and Liebenberg 2011; Eastman and Xu 2021), and financing constraints (Pagach and Warr 2011).

[13] Double clustering is consistent with work in this literature (e.g., Ferguson et al. 2024; Raghunandan 2024). Our primary inferences are consistent if we only cluster standard errors by firm or state.

[14] Our use of public insurers is consistent with Krupa (2024). We focus on public insurers for several reasons. First, public insurers have a separation of ownership and control that is similar to other public firms typically studied in accounting literature, creating more generalizable cost and benefit considerations for managers. Second, the unique ownership structure of private insurers complicates our setting. Specifically, many private insurers are owned directly by their policyholders (mutual insurers). The incentives of mutual insurers to engage in operational misconduct, which directly affects policyholders through aggressive claims and underwriting practices, are likely to differ substantially from stock companies. Third, using consolidated public insurers ensures that our unit of observation is consistent for an *enterprise*-wide decision process.

benefit claims and reduced auto premiums from the influx of remote work (Pwc 2020). We require firms to be headquartered in the U.S. and require non-missing data for misconduct and controls. Finally, we exclude insurers that were deemed "too big to fail" following the financial crisis and therefore subject to heightened regulatory scrutiny.[15] This sample selection process results in a final sample of 1,254 firm-year observations across 139 unique firms for our primary test of H1. This sample corresponds with a stacked cohort sample of 4,585 observations. Table 1, Panel A presents the results of our sample selection process. Panel B presents our sample distribution of lead state regulators and corresponding year of ORSA implementation.

INSERT TABLE 1 HERE

Table 2 presents descriptive statistics for our sample, prior to stacking. Panel A presents descriptive statistics for our firm-year observations. Panel B presents the disaggregated composition of violations for our sample. Notably, insurance violations represent 84.53 percent of all violations that occur. Table 3, Panels A and B present a descriptive analysis in the difference in means between the pre- and post-ORSA period for insurers that are subject to ORSA (ORSA Covered), and those that are never subject to ORSA (premiums < $500 million) (Not Covered) for the incidence of an insurance violation, and the number of violations, respectively.[16] Unsurprisingly, during the pre-ORSA period, larger covered insurers tend to report a greater likelihood and frequency of insurance violations compared to smaller, non-covered insurers. The means for both the likelihood (Panel A) and frequency (Panel B) of insurance violations *increase* significantly in the post-ORSA period for covered insurers, while smaller non-covered insurers report small and statistically insignificant decreases. Importantly, our identification strategy

[15] These insurers include American International Group, Metlife, and Prudential, who were all determined to be "too big to fail" by the Financial Stability Oversight Council after the Dodd-Frank Act was passed. Our results are qualitatively similar if we include these insurers.
[16] Following Krupa (2024), we measure premium revenues using Compustat REVT.

outlined in equation (1) will also exploit variation in the timing of the treatment effect between larger public insurers. However, this descriptive analysis provides evidence consistent with an increase in operational misconduct following ORSA, which does not also occur within smaller, never-covered insurers. This provides comfort that a general trend toward more violations is not occurring across the insurance industry.

INSERT TABLE 2 HERE

INSERT TABLE 3 HERE

4. Empirical Results

4.1 Primary DiD Analysis

Table 4 presents the results of our primary test of H1 using the stacked cohort regression from equation (1). We alternate between the likelihood of an insurance violation in column (1) and the number of insurance violations in column (2). Across both columns, we find a positive and significant effect of mandated ERM on corporate misconduct ($p<0.01$). In terms of economic significance, the coefficient on ORSA in column (1) indicates that enhanced risk assessments are associated with a 6.5 percent *increase* in the likelihood of an insurance violation.

This evidence indicates that as managers gain additional confidence in their assessment of the economic magnitude of direct and indirect costs from operational misconduct, they learn that these costs are lower than previously expected under increased barriers to identifying and integrating this information. Importantly, this finding also indicates that managers perceive some potential net *benefits* from engaging in operational misconduct, suggesting that managers are willing to actively accept the risks of engaging in activities that violate regulatory boundaries.

INSERT TABLE 4 HERE

Our DiD research design mitigates many threats to identification. A key identifying

assumption underlying our DiD design is that, prior to the enactment of ORSA, firms exhibit parallel trends in the dependent variables between treatment and control, with trends only changing following ORSA implementation. To evaluate this assumption, we report event time analysis around the enactment of ORSA in Figure 1. Panel A (B) plots the coefficients from equation (1) for *Ins_Violation* (*ln(1+#InsViolations*). Trends are consistent in the years prior to ORSA, supporting the parallel trend assumption. Additionally, Figure 1 indicates that insurance violations begin to increase following ORSA, though the effect is not statistically significant until year *t*+2, consistent with a lead time for insurers to change insurance operations and these operations to be at least partially revealed to the insurance regulators.

INSERT FIGURE 1 HERE

Next in an untabulated analysis, we follow recent research by Rambachan and Roth (2022) and implement a robust inference "honest difference-indifferences" estimation to evaluate the sensitivity of our findings to violations of parallel trends in the post-ORSA period. When implementing an honest DiD analysis, which investigates the maximum violation of the parallel trends assumption that could exist while still yielding our documented treatment effect, we find that the "breakdown" point for *Ins_Violation* (*ln(1+#InsViolations)*) is 1.25 (1), indicating that the significant result we find is robust to allowing for violations of parallel trends 1 to 1.25 times as large as the maximum potential violation in the pre-treatment period. This suggests that our findings are robust to potential violations of the parallel trends assumption.

4.2 Falsification Test – Non-Operational Misconduct

Our primary analysis focuses on insurance-related violations, which constitute approximately 85 percent of all recorded violations within our sample period (Table 2, Panel B). These violations are particularly relevant as they represent misconduct that is most likely to yield

positive NPV for insurers, either through increased premium revenue or reduced cash outflows from claims. If the results we document are driven by managers actively identifying and pursuing activities with positive NPV that may lead to misconduct, we would not expect to observe similar patterns for violations unlikely to provide comparable operational benefits to the firm.

To examine this premise, we conduct a falsification test by analyzing all non-insurance violations, such as OSHA safety violations, EPA infractions, and employee-related violations. While some of these violations may incidentally generate benefits, they are not typically associated with core operational activities that drive firm value within the insurance industry. Consequently, managers are more likely to minimize exposure to these types of violations, regardless of improved risk assessment capabilities.[17]

Table 5 presents the results of this falsification test. In Column 1, we replace the dependent variable in Equation (1) with the likelihood of a non-insurance violation (*Other_Violation*). In Column 2, we replace the dependent variable with the count of non-insurance violations (*ln(1+#OtherViolations*). Across both specifications, the coefficient on ORSA is negative and near zero, with no significant effects detected. These results provide additional context to our findings and reduce concerns that our documented effects are attributable to a broader, confounding event causing an increase in all types of misconduct.

INSERT TABLE 5 HERE

4.3 Lead versus Non-Lead State Violations

As discussed in Section 2, ORSA requires insurers to submit an annual Summary Report

[17] For example, consider an OSHA violation associated with an unsafe maintenance facility at an insurance call center. The benefits associated with this safety violation are likely to be near zero. Therefore, if prior to ORSA, managers assess the direct and indirect costs of these violations to be X, while after ORSA, managers assess the direct and indirect costs to be Y, where X>Y>0, managers will likely engage in no change to their efforts to mitigate this exposure, assuming mitigation efforts are relatively costless.

to their lead state regulator. According to the ORSA Guidance Manual, the Summary Report must include three key components: (1) a description of the insurer's risk management framework, (2) an assessment of the insurer's risk exposures, and (3) a corporate-level solvency evaluation under various risk scenarios (NAIC 2012, 2014). The stated purpose of this report is to provide the lead state insurance commissioner with a high-level overview of the insurer's ORSA process (NAIC 2014, pg. 3). As such, the ORSA Summary Report offers a concise synthesis of the insurer's risk profile and ERM framework, rather than a detailed analysis of specific high-risk activities. Consequently, it is highly unlikely that the Summary Report serves as a direct tool for identifying misconduct by the lead state regulator.

To empirically evaluate this assertion, we reanalyze our data by separately identifying the treatment effect for insurance violations that occur within an insurer's lead state versus other states where the insurer operates. If the ORSA Summary Report or related ERM documentation facilitates regulatory action, we would expect any observed increase in violations to be concentrated in the lead state, where regulators have direct access to this information. Table 6 presents the results of this analysis. Columns 1 and 3 examine operational misconduct identified by the lead state regulator, while Columns 2 and 4 focus on violations identified by other states.

INSERT TABLE 6 HERE

The results do not support the alternative explanation that the ORSA Summary Report acts as a roadmap for lead state regulatory enforcement. While the coefficient on ORSA is positive across all columns, the magnitude of the increase in both the likelihood and frequency of operational misconduct is larger and statistically significant in states other than the lead state.[18] This finding suggests that the larger treatment effect observed in non-lead states is more consistent

[18] In untabulated analyses using seemingly unrelated regressions (SUR), we fail to find a statistically different effect between columns 1 and 2, and columns 3 and 4.

with operational misconduct yielding higher net present value (NPV) outside the jurisdiction of the lead state regulator, which typically has greater financial regulatory authority.

4.4. Cross-Sectional Analyses

Having established a positive relation between enhanced risk information and operational misconduct, we next examine variation in the treatment effect to investigate whether the learning mechanism is likely responsible for underlying our results. First, we expect that the effect of ORSA will be greater when the implementation of ERM is more likely to resolve greater information processing costs. To test this, we examine the differential effect of high versus low firm complexity, measured as the firm's average file size of the 10-K (Loughran and McDonald 2016). We expect greater complexity to be associated with higher frictions in acquiring, assessing, and integrating risk information. To test this, we separate the ORSA treatment effect between firms with above versus below median 10-K file size (*ORSA_HighComplex* and *ORSA_LowComplex*, respectively).

Table 7 reports the results of this analysis.[19] Across both columns, we find results consistent with the learning channel. Specifically, the effect of improved risk information on operational misconduct occurs within the more complex firms ($p<0.01$), whereas we fail to find an effect within low complexity firms. F-tests of the difference between treatment effects are significant at $p<0.05$. This is consistent with the learning mechanism underlying our results and indicates that information processing constraints that limit managers' ability to process and integrate risk information led to imprecise assessments of risks from operational misconduct.

INSERT TABLE 7 HERE

Next, if the learning channel is responsible for our results, we expect the positive effect of ORSA implementation on operational misconduct will be most salient for insurers with prior

[19] This results in a slightly smaller sample of firms where 10-K file size is not available.

instances of insurance violations. These insurers have a revealed preference to engage in misconduct, suggesting that managers previously identified some potential benefits from these activities. If the mandated risk assessments alleviate information fictions that constrained even greater misconduct, then we would expect misconduct to increase following ORSA implementation. To test this, we split the *ORSA* treatment effect by insurers that realized at least one insurance violation prior to ORSA (*ORSA_Previous_Viol*; 53.04 percent of ORSA covered insurers), versus those without prior violations (*ORSA_NoPrevious_Viol*; 46.96 percent of ORSA covered insurers).

Table 8 presents the results. Consistent with expectations, the effect of ORSA is concentrated among insurers with pre-ORSA violations ($p < 0.01$), while we find no significant effect for insurers without prior violations. F-tests of the difference between these treatment effects are significant at $p < 0.05$ or stronger. These findings suggest that mandated risk assessments primarily increase misconduct in firms already predisposed towards such behavior, as improved risk information reduces managers' uncertainty about the net benefits of misconduct.

INSERT TABLE 8 HERE

5. Additional Analysis

5.1. Misconduct in Relation to Changing Risk

ORSA regulations aim to enhance insurers' internal risk assessment processes, improving managers' risk-informed decision making. Notably, these regulations do not mandate reduced risk taking (NAIC 2014). Krupa (2024) finds no evidence of changes in CEO compensation vega following ORSA, suggesting that boards of directors did not uniformly decrease risk-taking incentives. Consequently, some firms may increase overall risk after ORSA, as managers reassess exposures and conclude risks are lower than previously perceived. Nonetheless, the heightened

ability to identify natural hedging opportunities among interdependent risks under ERM suggests that, on average, firm risk decreases following ORSA (Eckles et al. 2014; Krupa 2024).

This raises an important question: is increased operational misconduct concentrated among firms that choose to elevate risk, or does operational misconduct serve as a mechanism for boosting returns among firms that reduce their overall risk? For example, managers who identify significant risks in catastrophe-prone areas may reduce exposure to those regions or cede premiums to reinsurers, resulting in lower net premium revenues. These managers may then seek alternative opportunities to improve short-term performance, particularly in areas where risks are now perceived as lower.

To explore these dynamics, we first assess the overall impact of ORSA on firm risk, measured as the monthly standard deviation of equity returns in year t+1 (*STND_RET*).[20] Column 1 of Table 9 presents the results, which show that ORSA is associated with a reduction in firm risk on average, consistent with meaningful ERM implementation. This conclusion is further supported by the parallel trends depicted in Figure 1, Panel C, where risk-taking is stable in the pre-ORSA period but declines immediately following ORSA, centered around t=0.

INSERT TABLE 9 HERE

We then separate the treatment effect into firms that decrease versus increase firm risk between the pre- and post-ORSA periods (*ORSA_Risk_Reduction* and *ORSA_Risk_Increase*, respectively). Columns 2 and 3 of Table 9 report the corresponding effects of ORSA on operational misconduct. While the coefficient for firms that increase risk (*ORSA_Risk_Increase*) is positive, it is not statistically significant at conventional levels. In contrast, the effect for firms that reduce risk (*ORSA_Risk_Reduction*) is both economically large and statistically significant ($p < 0.05$). These

[20] *STND_RET* requires CRSP data which slightly reduces our sample size.

results suggest that managers may weigh the trade-offs between operational misconduct and alternative high-risk investments, particularly when opportunities for risk-taking are limited. This finding provides novel evidence that managers may strategically accept operational misconduct as a means to bolster returns when other avenues for risk-taking are curtailed.

5.2. Value Implications from Misconduct

Our conceptual framework suggests that as a result of mandated risk assessments, managers more precisely identify the costs and benefits from operational misconduct. With this enhanced information, managers also likely change the *mix* of operational misconduct, favoring actions with greater net benefits. Consequently, ORSA may change the relationship between *revealed* misconduct (i.e., misconduct that is identified and penalized) and firm value. To examine this, we modify equation (1) to include either Tobin's Q (TOBINQ) or fiscal year returns (RETURN) as the dependent variable, removing these same variables as controls in the model. We then interact *ORSA* with ln(1+#*InsViolations*) and examine how ln(1+#*InsViolations*) maps to value (returns) and whether ORSA affects this relationship.

INSERT TABLE 10 HERE

We report the results of this analysis in Table 10. In columns 1 and 2 (3 and 4) we evaluate the interactive effect of ORSA and ln(1+#*InsViolations*) on *TOBINQ* (*RETURN*). We alternate between models that exclude and include controls variables to evaluate the relative sensitivity of results to controls. With the interactive effect, the standalone coefficient on ln(1+#*InsViolations*) represents the effect of insurance violations on value *before* ORSA. Not surprisingly, across all four columns we see a negative and significant effect, consistent with revealed misconduct reducing firm value (i.e., the *costs* of misconduct have been realized). However, the coefficient on *ORSA**ln(1+#*InsViolations*) is *positive* and significant, reversing the baseline negative effect of

ln(1+#*InsViolations*) on value.[21] This result indicates that the overall cost of misconduct changes following ORSA. Combined with our primary results, this provides evidence that, while managers increase misconduct following ORSA, they do so in a way that presents more limited costs to the firm, consistent with risk-informed decision-making.

5.3. Managers' Self-Reporting as an Alternative Explanation

An alternative explanation is that enhanced risk information under ORSA facilitates whistleblowing by firm insiders to insurance regulators, increasing violation detection. ORSA mandates the aggregation and integration of risk information at senior management and board levels, which would suggest that top executives themselves are disclosing misconduct to regulators despite potential personal and firm-level reputational costs (Dey et al. 2021; Kuang et al. 2021).

Our tests in Section 5.2, however, indicate that ORSA leads to more risk-informed operational misconduct, resulting in violations that are less value-destructive when identified. The shift in the mix of operational misconduct contradicts the notion that whistleblowers provide regulators with new information that subsequently leads to violations – particularly given that whistleblower-initiated violations tend to incur even greater penalties (Heese and Leonelli 2025).

INSERT FIGURE 2 HERE

To further assess this alternative explanation, we extend our post-period event-time analysis. If ORSA-induced whistleblowing prompts managers to disclose misconduct and correct behavior, we would expect a temporary spike in violations followed by a reversion to baseline, or even a decline. Figure 2, Panels A and B, extend the post-event analysis to t+5. While violations initially increase beginning in *t*+2, they remain persistently elevated throughout the post-period, with no evidence of a mean reversion. This pattern is inconsistent with the notion that senior

[21] Tests of the sum of *ORSA + ORSA*ln(1+#InsViolations)* are not significantly different from 0 across any specification.

managers are "coming clean" to regulators and subsequently rectifying misconduct.

6. Conclusion

In this paper, we investigate the effect of mandated implementations of enterprise risk assessments on operational misconduct for public U.S. insurers. Using ORSA as a setting to examine the plausibly exogenous increase to manager's breadth and precision of firm-wide risk information, we find that operational misconduct increases. This finding suggests that prior to the mandated enterprise risk assessments managers overweighted (underweighted) the costs (benefits) associated with operational misconduct, consistent with evidence of rational inattention as managers rely on heuristics to simplify the decision-making process (Sims 2003).

To more fully explore whether managers' rational inattention and information processing constraints are likely explanations for the positive relation between ORSA and operational misconduct, we perform two cross-sectional analyses. First, we show that consistent with enterprise risk management implementations enhancing insurers' understanding about the costs and benefits associated with operational misconduct, the positive relation between risk assessments and operational misconduct is driven by insurers with previous instances of operational misconduct. Furthermore, we find that this positive relation is most salient for insurers with above median complexity (Loughran and McDonald 2016), consistent with more complex firms benefiting the most from the enhanced risk-related information derived from ERM implementation.

Finally, we explore whether the increase in operational misconduct corresponds to a general increase in risk appetite for insurers following ORSA. We find that, on average, firm risk decreases following ORSA. Moreover, the increase in operational misconduct following ORSA is concentrated among insurers that reduce their overall risk. This evidence suggests that managers

may trade off operational misconduct as a mechanism to generate returns when opportunities for other high-risk, high-reward investments have either diminished or are not expected to yield net benefits.

Overall, our findings are likely of interest to both firms and regulators. For firms, our evidence suggests that managers face information processing constraints related to risk-related decision making and may rely on heuristics that do not necessarily precisely weigh the costs vs benefits from engaging in risky actions, such as those that engender operational misconduct. For policymakers, our evidence suggests that for public insurers, the operational benefits associated with insurance-related misconduct may outweigh the costs of such misconduct, such as assessed monetary penalties. Understanding this evidence is important for both firms and regulators, as these entities seek to achieve success in their respective endeavors.

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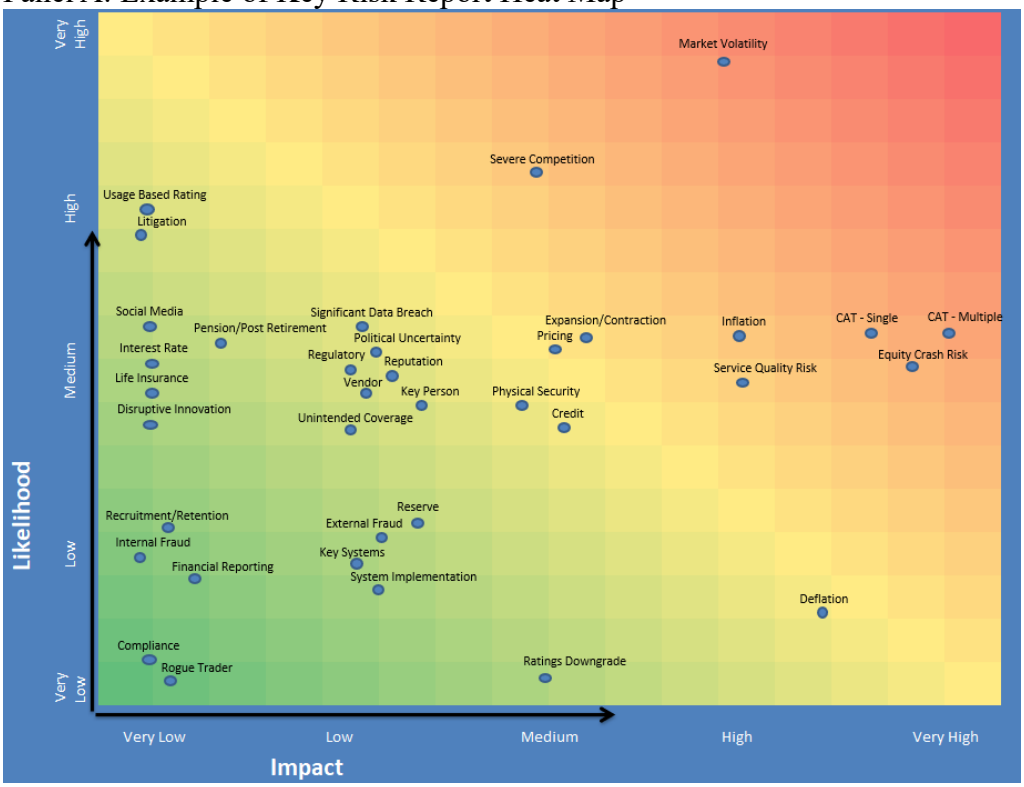
Appendix A

Panel A: Example of Key Risk Report Heat Map



Panel B: Example of Regulatory Risk

Tier III Risk

4 ***Regulatory Risk***

Brief Description: Potential federal and NAIC impact on systems, plans, rules, pricing strategy, etc

[redacted]

Risk	Likelihood	Impact
Inherent	M: [redacted] chance of occurring	L: [redacted] surplus impact
Residual	M: [redacted] chance of occurring	L: [redacted] surplus impact

Tier	Description	Control Activities
Tier III	[redacted]	– [redacted]

[redacted] December 2014 22

Appendix B
Variable Definitions

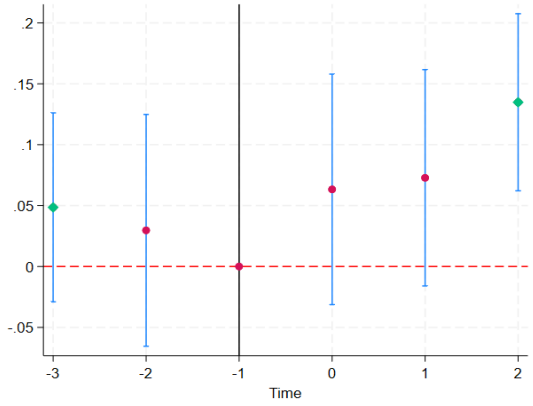
Ins_Violation	An indicator variable equal to 1 if a firm realizes at least one insurance violation during the year, 0 otherwise. We classify insurance violations as those violations where the primary offense is coded as "insurance violation." Source: Violation Tracker.
#InsViolations	The number of insurance violations realized per firm-year. Source: Violation Tracker.
Other_Violation	An indicator variable equal to 1 if a firm realizes at least one violation during the year that is not coded as an "insurance violation," 0 otherwise. Source: Violation Tracker.
#OtherViolations	The number of non-insurance violations realized per firm-year. Source: Violation Tracker.
STND_RET	The standard deviation of monthly equity returns for a firm in year t+1. Source: CRSP.
ORSA	An indicator variable equal to 1 in the year of a firm's lead state enactment of ORSA regulation and all following years, 0 otherwise. Firms are subject to ORSA if they report premiums (REVT) greater than or equal to $500 million in the period following ORSA adoption by the lead state. For firms that are not covered by ORSA, ORSA always equals 0. Source: Compustat and Krupa (2024).
ORSA_Previous_Viol	An indicator variable equal to 1 if ORSA = 1 and the insurer has at least one Ins_Violation in the pre-ORSA period, 0 otherwise. Source: Violation Tracker.
ORSA_NoPrevious_Viol	An indicator variable equal to 1 if ORSA = 1 and the insurer has no reported Ins_Violation in the pre-ORSA period, 0 otherwise. Source: Violation Tracker.
ORSA_HighComplex	An indicator variable equal to 1 if ORSA = 1 and the insurer has an above median 10-K file size among ORSA treated firms, 0 otherwise. Source: Loughran and McDonald (2016).
ORSA_LowComplex	An indicator variable equal to 1 if ORSA = 1 and the insurer has a below median 10-K file size among ORSA treated firms, 0 otherwise. Source: Loughran and McDonald (2016).
ORSA_Risk_Reduction	An indicator variable equal to 1 if ORSA = 1 and the insurer realizes a reduction in risk between the pre- and post-ORSA period, 0 otherwise. We calculate the change in risk as the firm's average post-ORSA period STND_RET less the firms' average pre-ORSA period STND_RET. Source: CRSP.
ORSA_Risk_Increase	An indicator variable equal to 1 if ORSA = 1 and the insurer realizes an increase in risk between the pre- and post-ORSA period, 0 otherwise. We calculate the change in risk as the firm's average post-ORSA period STND_RET less the firms' average pre-ORSA period STND_RET. Source: CRSP.

ASSETS	Fiscal year-end total assets (AT). Source: Compustat.
GROWTH	The percentage change in revenues (REVT) from year t-1 to year t. Source: Compustat.
ROA	Net income (NI) divided by average total assets (AT). Source: Compustat.
LEVERAGE	Total long-term debt (DLTT) divided by average total assets (AT). Source: Compustat.
TOBINQ	Tobin's Q, measured as the firm's market value of equity (PRCC_F*CHSO) plus debt (DLTT+DLC) divided by total assets at year end (AT). Source: Compustat.
IIQ	The average earnings announcement speed calculated as the number of days between fiscal year end and the earnings announcement date. This number is multiplied by negative 1 such that the measure is increasing in internal information quality. Source: Compustat.
FOREIGN	An indicator variable for the existence of non-zero foreign earnings. Source: Compustat.
CAPX	Capital expenditures (CAPX) divided by average total assets (AT). Source: Compustat.
PREMIUMS	The intensity of insurance premiums as a percentage of total assets. Calculated as REVT divided by average total assets (AT). Source: Compustat.
RETURN	Fiscal year equity returns, calculated as the percentage change in PRCC_F between year t-1 and year t. All insurers in our sample are fiscal year end firms. Source: Compustat.

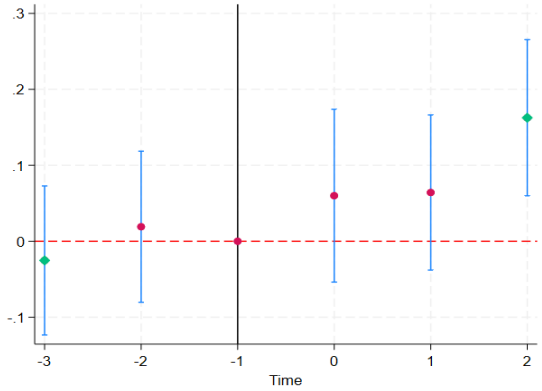
Figure 1

Event-Time Analysis Around ORSA

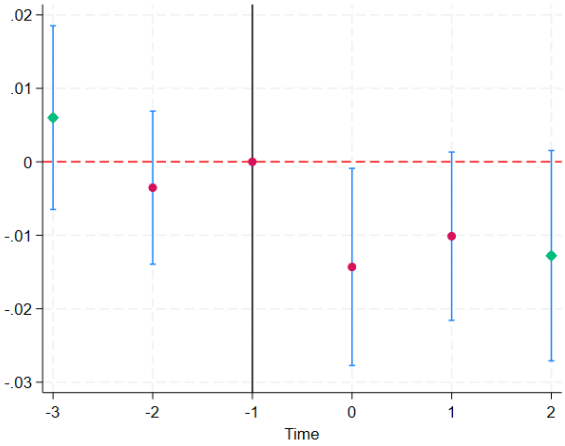
Panel A: Insurance Violation



Panel B: ln(1+#Insurance Violations)



Panel C: Firm Risk (Standard Deviation of Returns)

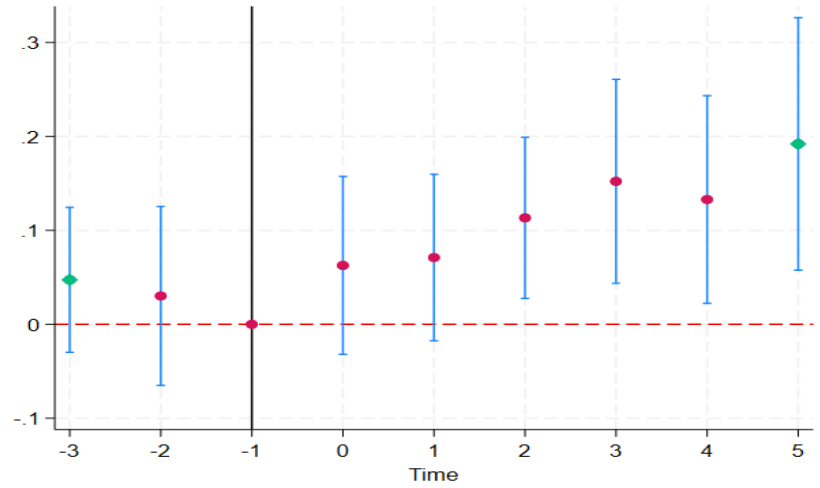


This figure displays the coefficient estimates and confidence intervals for the collapsed event study regressions estimating the difference in the likelihood (number) of insurance violations in Panel A (Panel B) for ORSA treated versus nontreated firms over time relative to the year preceding the enactment of ORSA. Panel C presents the effect on a firm's standard deviation of returns (*SD_RET*). Results indicate that risk reduction is centered on the enactment year of ORSA regulation, with violations beginning to significantly increase by year t+2. This is consistent with the time for managers to alter activities that result in misconduct and then have those activities identified by state regulatory agencies. Additionally, the graph displays a relatively constant pre-period trend for outcomes, providing comfort that the effect does not represent an unmeasured trend in these variables. Circle points represent the coefficient estimate for each time interval, whereas diamond points represent the aggregation of the coefficient for remaining pre- and post-periods. Error bands represent 90 percent confidence intervals.

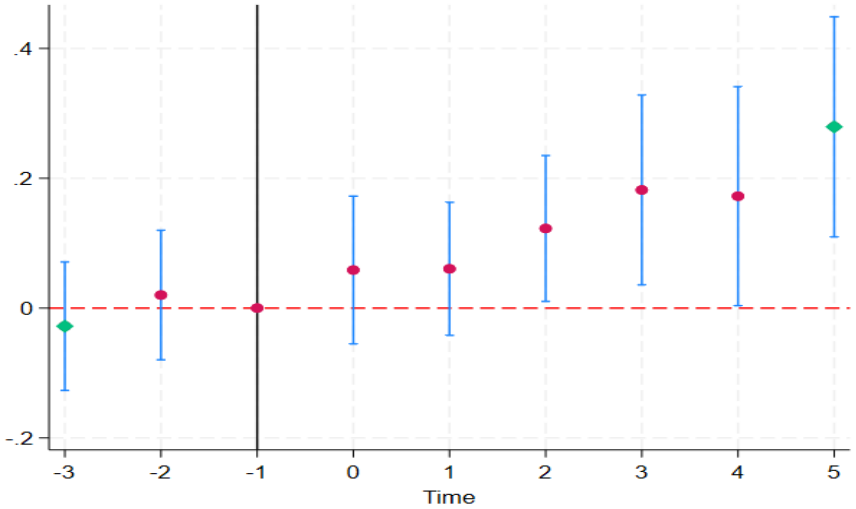
Figure 2

Extended Post Period Event-Time Analysis

Panel A: Insurance Violation



Panel B: ln(1+#Insurance Violations)



This figure displays an extended post-period analysis for the likelihood (number) of insurance violations using a collapsed event study regression in Panel A (B). Results indicate that the uptick in insurance violations beginning in *t*+2 remains persistent through all remaining post periods. This result is consistent with a strategic change to the acceptance of operational misconduct and inconsistent with a short-term whistleblowing effect with managers subsequently taking corrective actions. Circle points represent the coefficient estimate for each time interval, whereas diamond points represent the aggregation of the coefficient for remaining pre-and post-periods. Error bands represent 90 percent confidence intervals.

Table 1

Sample
Panel A: Sample Selection Process

	Observations	Unique Firms
Compustat North American Public Insurers (2 digit SIC = 63) from 2007 - 2019	2,003	237
Drop HQ Location not in Continental United States	1,567	189
Drop Missing Control Variables	1,311	160
Drop "Too Big to Fail" Insurers	1,272	157
Drop Singleton Observations	1,254	139

Table 1 (Continued)

Sample

Panel B: Sample Locations of Lead States and Implementation Year of ORSA

State	Firm-Years	Percent	ORSA Implementation
AL	44	3.51	2016
CA	73	5.82	2013
CO	13	1.04	2015
CT	79	6.3	2015
DE	22	1.75	2014
FL	103	8.21	2016
GA	26	2.07	2015
IA	46	3.67	2013
IL	110	8.77	2014
IN	39	3.11	2014
KY	12	0.96	2014
LA	13	1.04	2015
MA	32	2.55	2017
ME	13	1.04	2015
MI	18	1.44	2015
MN	30	2.39	2014
MO	38	3.03	2015
NC	20	1.59	2017
ND	2	0.16	2015
NE	13	1.04	2014
NH	24	1.91	2013
NJ	17	1.36	2014
NV	12	0.96	2015
NY	99	7.89	2014
OH	63	5.02	2014
OK	4	0.32	2015
OR	9	0.72	2015
PA	89	7.1	2013
TN	17	1.36	2014
TX	86	6.86	2015
VA	34	2.71	2014
WA	28	2.23	2015
WI	26	2.07	2014

This table represents our sample selection process (Panel A) and lead state locations (Panel B). This sample corresponds to our main stacked cohort analysis of 4,585 observations.

Table 2

Descriptive Statistics
Panel A: Sample Univariates

Variable	N	Mean	50%	SD	25%	75%
Ins_Violation	1,254	0.262	0.000	0.440	0.000	1.000
Ln(1+#InsViolations)	1,254	0.373	0.000	0.715	0.000	0.693
Other_Violation	1,254	0.130	0.000	0.336	0.000	0.000
Ln(1+#OtherViolations)	1,254	0.116	0.000	0.315	0.000	0.000
ORSA	1,254	0.277	0.000	0.448	0.000	1.000
Ln(ASSETS)	1,254	8.496	8.559	2.025	7.051	10.057
GROWTH	1,254	0.043	0.040	0.237	-0.024	0.114
ROA	1,254	0.016	0.018	0.053	0.006	0.037
LEVERAGE	1,254	0.073	0.051	0.082	0.020	0.098
TOBINQ	1,254	0.448	0.349	0.426	0.216	0.551
IIQ	1,254	-0.140	-0.124	0.063	-0.166	-0.101
FOREIGN	1,254	0.168	0.000	0.374	0.000	0.000
ACQ	1,254	0.004	0.000	0.014	0.000	0.000
CAPX	1,254	0.004	0.001	0.007	0.000	0.005
PREMIUMS	1,254	0.488	0.282	0.629	0.167	0.471
RETURN	1,254	-0.079	0.056	0.581	-0.143	0.190

Panel B: Composition of Violations

Offense Group	Frequency	Percent	Median Penalty	Mean Penalty
Consumer Protection Related Offenses [Insurance]	2,087	84.53	15,000	582,529
Consumer Protection Related Offenses [Other]	114	4.61	1,737,610	16,958,802
Employment Related Offenses	97	3.93	166,671	6,347,871
Government Contracting Related Offenses	36	1.46	17,250,000	41,348,952
Healthcare Related Offenses	34	1.38	116,580	453,358
Financial Offenses	32	1.30	2,055,477	21,832,809
Environmental Related Offenses	28	1.13	24,993	55,577
Safety Related Offenses	23	0.93	9,900	12,181
Competition Related Offenses	18	0.73	4,500,000	21,676,414

This table presents descriptive statistics. In panel A, we report univariate descriptive statistics for our sample. All continuous variables are winsorized at 1 and 99 percent. In Panel B, we report the disaggregated composition of all violations that occur within our sample period.

Table 3

Descriptive 2x2 Analysis

Panel A: Insurance Violation Indicator

	Pre	**Post**	**Diff.**
ORSA Covered	0.3123	0.4339	0.1216***
			(3.30)
ORSA Not Covered [Premiums < $500M]	0.0281	0.0198	-0.0083
			(0.44)
			Diff. - in - Diff.
			0.1299***
			(4.34)

Panel B: ln(1+#Insurance Violations)

	Pre	**Post**	**Diff.**
ORSA Covered	0.4415	0.6397	0.1981***
			(3.41)
ORSA Not Covered [Premiums < $500M]	0.0209	0.0206	-0.0003
			(0.02)
			Diff. - in - Diff.
			0.1984***
			(4.31)

This table presents the descriptive two-by-two analysis of the difference in means between corporate misconduct within ORSA covered versus non-covered firms in the pre-versus post periods. Panel A presents means of the indicator variable *Ins_Violation*. Panel B presents means of the frequency of insurance violations (*ln(1+#InsViolations*)). T-statistics for the difference in means are presented in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4

Stacked Cohort Regression: Effect of ORSA on Insurance Violations

VARIABLES	(1) Ins_Violation	(2) Ln(1+#InsViolations)
ORSA	**0.064*** **	**0.101*** **
	(3.30)	**(3.56)**
Ln(ASSETS)	0.044	0.082
	(1.21)	(0.99)
GROWTH	-0.028	-0.064
	(-0.91)	(-0.95)
ROA	0.199*	0.220*
	(1.75)	(1.80)
LEVERAGE	0.019	0.206
	(0.12)	(0.60)
TOBINQ	-0.062**	-0.054
	(-2.15)	(-1.50)
IIQ	0.023	0.054
	(0.29)	(0.49)
FOREIGN	0.073	0.169**
	(1.44)	(2.30)
ACQ	0.019	0.819
	(0.06)	(1.34)
CAPEX	-0.486	-2.604
	(-0.18)	(-0.69)
PREMIUMS	-0.058	-0.053
	(-1.29)	(-0.50)
RETURN	-0.030**	-0.035**
	(-2.36)	(-2.65)
Observations	4,585	4,585
Adjusted R-squared	0.634	0.782
Firm-by-Cohort FE	Yes	Yes
Year-by-Cohort FE	Yes	Yes

This table presents the primary analysis of the stacked cohort regression outlined in equation (1). We examine the effect of enhanced risk information through ORSA regulation (*ORSA*) on firms' operational misconduct. This research design creates a different group for each cohort year of ORSA implementation. Increased observation counts from stacking cohorts are controlled through interactive fixed effects between cohort and firm and cohort and year. For each new cohort year, firms that were initially treated in a previous cohort are omitted. Column 1 analyzes the effect of ORSA on the likelihood of an insurance violation during the year (*Ins_Violation*). Column 2 analyzes the effect of ORSA on the number of insurance violations (*ln(1+#InsViolations*). Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5

Stacked Cohort Regression: Effect of ORSA on Non-Insurance Violations

VARIABLES	(1) Other_Violation	(2) Ln(1+#OtherViolations)
ORSA	**-0.003**	**-0.005**
	(-0.13)	**(-0.21)**
Ln(ASSETS)	0.057**	0.047**
	(2.45)	(2.29)
GROWTH	0.023	0.020
	(0.54)	(0.54)
ROA	-0.030	0.065
	(-0.21)	(0.39)
LEVERAGE	-0.126	-0.236
	(-0.75)	(-1.56)
TOBINQ	-0.133*	-0.156*
	(-1.81)	(-1.81)
IIQ	-0.079	-0.078
	(-0.79)	(-0.84)
FOREIGN	-0.061	-0.028
	(-0.63)	(-0.31)
ACQ	0.463	0.323
	(1.37)	(0.93)
CAPEX	-2.040*	-2.360*
	(-1.81)	(-1.86)
PREMIUMS	-0.074	-0.055
	(-1.60)	(-1.17)
RETURN	0.032**	0.028**
	(2.31)	(2.14)
Observations	4,585	4,585
Adjusted R-squared	0.393	0.410
Firm-by-Cohort FE	Yes	Yes
Year-by-Cohort FE	Yes	Yes

This table presents a falsification test examining the effect of enhanced risk information through ORSA regulation (*ORSA*) on firms' non-operational misconduct. This research design creates a different group for each cohort year of ORSA implementation. Increased observation counts from stacking cohorts are controlled through interactive fixed effects between cohort and firm and cohort and year. For each new cohort year, firms that were initially treated in a previous cohort are omitted. Column 1 analyzes the effect of ORSA on the likelihood of a non-insurance violation during the year (*Other_Violation*). Column 2 analyzes the effect of ORSA on the number of non-insurance violations (*ln(1+#OtherViolations*). Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6

Lead State Versus Not Lead State Violations

VARIABLES	(1) Lead State Ins_Violation	(2) Other State Ins_Violation	(3) Lead State Ln(1+#InsViolations)	(4) Other State Ln(1+#InsViolations)
ORSA	**0.027**	**0.053****	**0.023**	**0.079****
	(1.40)	**(2.56)**	**(1.39)**	**(2.53)**
Ln(ASSETS)	-0.011	0.046	-0.012	0.082
	(-0.80)	(1.24)	(-0.78)	(0.99)
GROWTH	0.012	-0.037	0.009	-0.073
	(1.01)	(-1.28)	(1.03)	(-1.09)
ROA	-0.065**	0.226**	-0.040*	0.240*
	(-2.16)	(2.06)	(-1.78)	(1.90)
LEVERAGE	0.023	0.008	0.022	0.200
	(0.50)	(0.04)	(0.62)	(0.56)
TOBINQ	-0.012	-0.055*	-0.006	-0.050
	(-1.33)	(-1.94)	(-1.05)	(-1.39)
IIQ	0.018	0.014	0.020	0.046
	(0.44)	(0.19)	(0.66)	(0.43)
FOREIGN	-0.013	0.063	-0.002	0.163**
	(-0.23)	(1.29)	(-0.04)	(2.48)
ACQ	0.139	-0.133	0.165	0.638
	(0.67)	(-0.43)	(0.89)	(1.11)
CAPEX	-1.333**	0.520	-1.200*	-1.199
	(-2.34)	(0.20)	(-2.00)	(-0.32)
PREMIUMS	-0.018	-0.033	-0.013	-0.028
	(-0.96)	(-0.77)	(-0.72)	(-0.28)
RETURN	0.001	-0.031**	0.001	-0.035**
	(0.13)	(-2.50)	(0.09)	(-2.42)
Observations	4,585	4,585	4,585	4,585
Adjusted R-squared	0.222	0.655	0.335	0.790
Firm-by-Cohort FE	Yes	Yes	Yes	Yes
Year-by-Cohort FE	Yes	Yes	Yes	Yes

This table presents the effect of enhanced risk information through ORSA regulation (*ORSA*) on firms' operational misconduct that occurs in either the firm's lead state regulator (columns 1 and 3), or other state regulators (columns 2 and 4). This research design creates a different group for each cohort year of ORSA implementation. Increased observation counts from stacking cohorts are controlled through interactive fixed effects between cohort and firm and cohort and year. For each new cohort year, firms that were initially treated in a previous cohort are omitted. Columns 1 and 3 analyze the effect of ORSA on the likelihood of an insurance violation during the year (*Ins_Violation*). Columns 2 and 4 analyze the effect of ORSA on the number of insurance violations (*ln(1+#InsViolations*). Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8

Revealed Preference for Violations

VARIABLES	(1) Ins_Violation	(2) Ln(1+#InsViolations)
ORSA_Previous_Viol	**0.104*** **	**0.189*** **
	(3.51)	**(4.51)**
ORSA_NoPrevious_Viol	**0.003**	**-0.036**
	(0.13)	**(-1.06)**
Ln(ASSETS)	0.043	0.079
	(1.20)	(0.98)
GROWTH	-0.028	-0.064
	(-0.90)	(-0.94)
ROA	0.207*	0.238**
	(1.82)	(2.05)
LEVERAGE	0.013	0.193
	(0.08)	(0.58)
TOBINQ	-0.064**	-0.057
	(-2.19)	(-1.59)
IIQ	0.026	0.062
	(0.33)	(0.58)
FOREIGN	0.071	0.165**
	(1.40)	(2.30)
ACQ	0.007	0.793
	(0.02)	(1.31)
CAPEX	-0.398	-2.408
	(-0.15)	(-0.64)
PREMIUMS	-0.057	-0.052
	(-1.30)	(-0.50)
RETURN	-0.030**	-0.035**
	(-2.38)	(-2.73)
Test: Previous = NoPrevious	0.101**	0.225***
	[0.01]	[0.00]
Observations	4,585	4,585
Adjusted R-squared	0.635	0.783
Firm-by-Cohort FE	Yes	Yes
Year-by-Cohort FE	Yes	Yes

This table presents an analysis of variation in the treatment effect of *ORSA* regulation on firms' operational misconduct. We separately examine the effect for treated firms that have at least one insurance violation in the pre-ORSA sample period (*ORSA_Previous_Viol*) and the effect for treated firms that do not have a previous insurance violation (*ORSA_NoPrevious_Viol*). Column 1 analyzes the effect of ORSA on the likelihood of an insurance violation during the year (*Ins_Violation*). Column 2 analyzes the effect of ORSA on the number of insurance violations (*ln(1+#InsViolations*). Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. Probability values from F-tests of differences are reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 9

Analysis of the Relation Between Risk Reduction and Corporate Violations

VARIABLES	(1) STND_RET	(2) Ins_Violation	(3) Ln(1+#InsViolations)
ORSA	**-0.010****		
	(-2.58)		
ORSA_Risk_Reduction		**0.068****	**0.118*****
		(2.46)	**(3.13)**
ORSA_Risk_Increase		**0.046**	**0.015**
		(1.23)	**(0.33)**
Ln(ASSETS)	0.015*	0.049	0.088
	(1.73)	(1.28)	(1.01)
GROWTH	-0.002	-0.029	-0.080
	(-0.23)	(-0.77)	(-0.90)
ROA	-0.121	0.303*	0.326
	(-0.96)	(1.73)	(1.57)
LEVERAGE	-0.023	-0.071	0.115
	(-0.35)	(-0.45)	(0.35)
TOBINQ	0.007	-0.094**	-0.075
	(0.37)	(-2.66)	(-1.20)
IIQ	-0.206*	0.046	0.074
	(-1.96)	(0.57)	(0.64)
FOREIGN	-0.008	0.067	0.167**
	(-0.86)	(1.27)	(2.11)
ACQ	0.067	0.076	0.925
	(0.76)	(0.21)	(1.35)
CAPEX	-0.046	-0.262	-2.750
	(-0.12)	(-0.08)	(-0.65)
PREMIUMS	0.055**	-0.099	-0.096
	(2.66)	(-1.14)	(-0.51)
RETURN	-0.029***	-0.035**	-0.040**
	(-5.69)	(-2.17)	(-2.36)
Test: Risk_Reduction = Risk_Increase		0.022	0.103*
		[0.34]	[0.05]
Observations	4,163	4,163	4,163
Adjusted R-squared	0.573	0.625	0.778
Firm-by-Cohort FE	Yes	Yes	Yes
Year-by-Cohort FE	Yes	Yes	Yes

This table presents an analysis of variation in the treatment effect of *ORSA* regulation on firms' operational misconduct. We first confirm that ORSA, on average results in a reduction to firm risk, measured as the standard deviation of monthly equity returns in t+1 (*STND_RET*), presented in column 1. We then separately examine the effect for treated firms that realize an average decrease in risk-taking following ORSA, measured as the mean *STND_RET* in the post period less the mean *STND_RET* in the pre-period (*ORSA_Risk_Reduction*) versus the effect for treated firms that realize an average increase in risk taking following ORSA (*ORSA_Risk_Increase*). Column 2 analyzes the effect of ORSA on the likelihood of an insurance violation during the year (*Ins_Violation*). Column 3 analyzes the effect of ORSA on the number of insurance violations (*ln(1+#InsViolations*). Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. Probability values from F-tests of differences are reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 10

Effect of ORSA on the Value Implications of Misconduct

VARIABLES	(1) TOBINQ	(2) TOBINQ	(3) RETURN	(4) RETURN
ORSA*Ln(#InsViolations)	**0.060*** **	**0.055*** **	**0.072*** **	**0.087*** **
	(3.89)	**(2.97)**	**(2.96)**	**(3.91)**
Ln(#InsViolations)	**-0.042** **	**-0.038*** **	**-0.120*** **	**-0.126*** **
	(-2.67)	**(-3.26)**	**(-4.00)**	**(-4.60)**
ORSA	-0.008	-0.005	-0.014	-0.041
	(-0.18)	(-0.14)	(-0.28)	(-0.89)
Ln(ASSETS)		-0.101		-0.108
		(-1.67)		(-1.29)
GROWTH		-0.069		0.113
		(-1.42)		(1.13)
ROA		1.435**		2.535***
		(2.72)		(3.04)
LEVERAGE		1.057*		0.217
		(1.79)		(0.34)
IIQ		0.468**		2.084
		(2.63)		(1.32)
FOREIGN		-0.065*		0.201
		(-2.01)		(1.50)
ACQ		-0.921**		1.934*
		(-2.33)		(1.82)
CAPEX		1.358		-3.179
		(0.55)		(-1.32)
PREMIUMS		-0.370***		-0.295***
		(-3.05)		(-3.47)
Observations	4,585	4,585	4,585	4,585
Adjusted R-squared	0.838	0.873	0.318	0.379
Firm-by-Cohort FE	Yes	Yes	Yes	Yes
Year-by-Cohort FE	Yes	Yes	Yes	Yes

This table presents an analysis of the effect of ORSA regulation on the mapping of insurance violations (*Ln(#InsViolations)*) to firm value (*TOBINQ*) and annual equity returns (*RETURN*). Column 1 and 3 (2 and 4) present results without (with) control variables. Standard errors are double clustered by firm and lead state. Cluster robust t-statistics are in parentheses. *** p<0.01, ** p<0.05, * p<0.1