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# THOUGHT LEADERSHIP BRIEF

# Can Regulatory Shaming Amplify the Enforcement Deterrence? – A Study on Safety Violations

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## KEY POINTS

- Human capital is an important driver of economic growth, especially for emerging markets in transition to knowledge-intensive industries.
- Although legislators have passed laws and regulations that govern safety, emerging markets often neglect occupational health and safety due to social, economic and political factors, and regulators in these markets often lack resources to monitor safety violations, reducing the deterrence of such laws.
- Our research shows that regulatory shaming, or publicizing enforcement actions, can be a low cost way to amplify the deterrence of regulatory enforcements.
- Firms' investment in employees' wellbeing and safety can be influenced by safety violations of peer firms due to informal information sharing among employees.

## ISSUE

Human capital is an important driver of economic growth. Despite the growing importance of labor, emerging markets often neglect occupational health and safety due to social, economic and political factors. According to the World Health Organization (WHO) and International Labour Organization (ILO), in 2016, work-related diseases and injuries were responsible for 1.9 million deaths worldwide. Although legislators have passed laws and regulations that govern safety, the effectiveness of these laws depends on their enforcements. Regulators, especially those in emerging markets, often lack resources to monitor safety violations, thereby reducing the deterrence of such laws. How to leverage limited resources in enforcements is a pressing issue that regulators face.

In the United States, under the Occupational Safety and Health Act of 1970 (the OSH Act), employers have the responsibility to provide a safe workplace, which includes informing workers about chemical hazards, providing safety training to workers, and providing adequate personal protective equipment. The OSH Act created Occupational Safety and Health Administration (OSHA), a federal regulatory agency under the United States Department of Labor, and gave it authority to enforce workplace health and safety standards. OSHA's mission is to "assure safe and healthy working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance." To enforce health and safety standards, OSHA inspects worksites and issues fines if it finds any violation of safety standards. Due to resource and budget constraints, OSHA selectively inspects a limited number of facilities based on certain priorities every year. For example, during the fiscal year 2019, OSHA conducted over 32,000 inspections out of over 8 million worksites that OSHA is responsible for and issued nearly USD $300 million in penalty (see Table 1).

These enforcements impose significant costs on violating firms, such as costs related to remediation, litigation, and reputation, and serve as deterrence for all firms against future violations. To improve enforcement transparency and amplify deterrence, OSHA, similar to other regulators such as the Securities and Exchange Commission, the Food and Drug Administration, the Environmental Protection Agency, and the Justice Department, can choose to publicize violations and enforcement outcomes (also referred to as regulatory shaming).

Despite the widespread practice of regulatory shaming, we know relatively little about the overall impacts of regulatory shaming. Can these disclosures amplify the effect of enforcement actions and nudge non-violating firms into increasing firm-wide safety investments?

**Table 1. Distribution of OSHA Inspections, Safety Violations, and Press Releases**

| Fiscal Year | Number of Inspections | Number of Violations | Total Penalty (in Million) | Number of Press Release |
|---|---|---|---|---|
| 2009 | 37,184 | 25,859 | 174.33 | 425 |
| 2010 | 38,566 | 27,928 | 187.69 | 480 |
| 2011 | 37,972 | 26,708 | 291.82 | 624 |
| 2012 | 40,322 | 26,288 | 229.83 | 598 |
| 2013 | 39,558 | 24,890 | 210.42 | 541 |
| 2014 | 36,561 | 22,869 | 197.06 | 510 |
| 2015 | 35,720 | 22,864 | 210.53 | 521 |
| 2016 | 32,145 | 20,853 | 227.45 | 516 |
| 2017 | 32,408 | 20,660 | 271.40 | 222 |
| 2018 | 31,583 | 19,718 | 262.26 | 233 |
| 2019 | 32,821 | 20,575 | 298.68 | 288 |

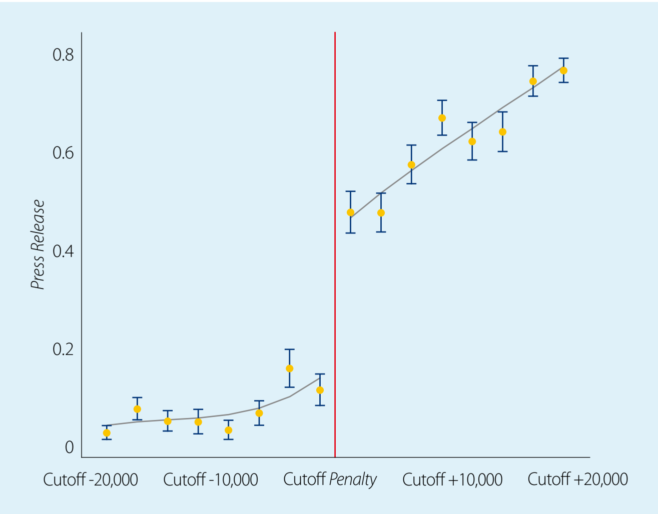
## ASSESSMENT

Both the enforcement actions themselves and their disclosure can influence non-violating firms' safety investments. To study the isolated effect of disclosure, it is important to control for the enforcement actions. In our research (Huang et al. 2023), we follow Johnson (2020) and exploit a unique setting of workplace safety regulations that allows us to disentangle the effect of disclosures from regulatory enforcements.

Specifically, to enforce safety standards, OSHA conducts inspections on worksites and issues financial penalties if it finds any violation. Following the enforcement against a facility, OSHA posts related information on its public website and may issue a press release to the facility's local media and industry trade press if the violation is severe. Compared to posting enforcement information on OSHA's website, these press releases reach a much broader audience, including employees of nearby facilities and other firms in the same industry. OSHA refers to such a practice as "regulation by shaming" and states that the press releases are intended to magnify the effect of safety enforcement.

In 2009, OSHA instituted a policy to use whether the penalty levied in a violation is above a cutoff (or threshold) in deciding whether to issue a press release about the violation. Although OSHA's regional offices do not strictly adhere to this policy, our empirical results show that violations carrying penalties slightly higher than the cutoff have a significantly higher probability of receiving press releases than those carrying penalties slightly below the cutoff (see Figure 1).

**Figure 1. The Relation Between the Likelihood of Press Releases and Whether the Penalty Is Above the Cutoff**




Meanwhile, the two groups of focal facilities, i.e., those with safety standards violations whose penalties are just above or below the cutoff, have similar penalties and thus their violation severity should not be fundamentally different. We take advantage of this jump in the likelihood of press release and compare the influences of these two groups of focal facilities. In essence, since the two groups of facilities have similar severity of safety violations, we can attribute the difference of their effects to the press release.

To document the deterrence effect of regulatory shaming, we examine changes in peer firms, that is, those that operate a facility in the same county and same industry (peer facility hereafter) as the focal facility, because they are the intended audience of OSHA's press releases. More specifically, we investigate whether peer firms increase investments that can directly reduce their future safety violations. We classify peer firms into the treated and control group based on whether their facilities have been affected by OSHA's press releases, that is, whether their facility is a peer facility of focal facilities with above or below-cutoff penalty.

Johnson (2020) finds that peer facilities influenced by press releases have fewer safety violations in the future but does not examine peer firms' firm-wide policy or their safety investments. We argue that OSHA's press release about safety violations should induce peer firms to increase their firm-wide safety investments because their employees should be more aware of such safety violations following the press release, e.g., through information sharing among employees and demand their managers to improve workplace safety. On the other hand, it is also possible that peer firms may face resource constraints and thus even though they face pressure to increase safety investment in affected facilities, they pay for such increase by reducing safety investment from non-affected facilities, i.e., geographic substitution. In sum, whether treated peer firms increase firm-wide safety investments is an empirical question.

Our main results are as follows. First, we find that compared with control peer firms, treated peer firms hire more safety-related employees and become more likely to implement a health and safety management system, consistent with our hypothesis that the press release causes treated peer firms to increase safety investments. We also conduct cross-sectional tests to investigate the mechanism of our findings. We find the increase in peer firms' safety investments is more pronounced when firms have a stronger teamwork culture, when their employees from different facilities are more socially connected, and when their employees are more likely to be represented by a union, all of which can facilitate information sharing among employees.

Next, we investigate a possible unintended consequence of enforcement disclosure salience by comparing the treatment group's violations of other types of regulations versus those of the control group. We find that, compared to the control group, the treatment group is more likely to violate environmental regulations and has more severe environmental violations. Cross-sectional tests show that this cross-misconduct substitution effect is stronger when firms face more severe financial constraints and when the potential negative externality of their environmental violations is lower, consistent with firms considering the relative costs of complying with different regulations.

Last, we explore how OSHA's press release affects peer firms' disclosure related to workplace safety. We find that treated peer firms disclose more information related to safety in their risk factors (Item 1A) of 10-K filings after the OSHA's press releases. This finding is consistent with the notion that treated peer firms become more aware of workplace safety and inform investors about related risks.

## RECOMMENDATION / IMPLICATION

First, our research has implications for regulators by documenting evidence that regulatory shaming can increase the deterrence of enforcements. We show that when regulators publicize enforcement actions, it induces changes not only in nearby facilities, but also peer firms' firm-wide practices. Our evidence on safety investments suggests that the lower safety violation results in prior studies is unlikely driven by peer firms' becoming more adept at hiding violations. Importantly, we show that the deterrence effect of regulatory shaming is not limited to the region where the focal facilities locate but can spread to other regions through the intra-firm network. Thus, our study suggests that press releases can be a low-cost way to amplify the deterrence effect of enforcement.

Second, our research also has important implications for firms operating across geographic regions. Prior studies show within-firm knowledge sharing and usually attribute such practice to firm policy or management actions. We show that employees sharing information can also prompts firm-wide policy change. Our results imply that such informal information-sharing may counter firms' strategic allocation of resources across locations and dampen geographic substitution effects. We recommend that firms pay attention to employee sentiments and feedbacks when considering location-specific or firm-wide policies.

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Prior to joining HKUST, he worked in the Quantitative Equity Strategy group in Lehman Brothers and Barclays Capital in New York. Allen holds a Ph.D. in Business Administration from Duke University and a B.S. in Electronics from Peking University in China.

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