

Public Participation in Governance Strengthens Pollution Enforcement

Public participation within China's officially sanctioned channels improved local regulator's enforcement of environmental standards and led to reduced industrial emissions.

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The Policy Problem

Environmental pollution is a global public health emergency; 2.8 billion people breathe polluted air, and 1.5 billion people don't have access to safe drinking water. Regulating pollution is critical to ensure access to clean air and water, but it is very costly to continuously monitor and enforce the standards that polluters are supposed to live up to. To address the monitoring problem, China implemented a Continuous Emissions Monitoring System (CEMS) that automatically collects emissions data for major polluting plants and posts the data online. Though all violations are now in theory known to local regulators and the public, enforcement is still lacking – 33% of CEMS firms committed violations in 2019. Is this regulatory failure by design, or due to government capacity issues? This study investigates how public participation impacts enforcement of environmental standards in China, the world's largest polluter.

Key findings and proposed solutions

- Public complaints of violations reduced violations by over 60% and reduced SO₂ emissions by 12%. Private complaints reduced violations by 25%.
- Increasing the visibility of social media appeals about a violation by adding likes/shares to the post greatly increased enforcement effort.

- Citizen participation in regulatory channels improves government accountability, especially when the appeals are public and highly visible.

What We Found

Public complaints of environmental violations on social media significantly reduced subsequent violations by 60% compared to the control group. This led to a decline in sulfur dioxide emissions by 12% over the 8-month study period. In contrast, with nearly identical wording and content, private complaints to regulators and firms only led to a 25% reduction in violations.

The context for the second finding is that local regulators have competing goals of facilitating economic growth and environmental regulation, and that often there is more incentive to prioritize economic growth. However, our findings suggest that the visible nature of the public appeals tilt regulators' priorities toward enforcing against pollution to abate public unrest. Additionally, a social media post with greater visibility increased the probability of an on-site investigation by nearly 65%.

What We Did

Over an eight-month experiment, citizen volunteers reported nearly 3,000 environmental violations by 24,620 CEMS firms. Each CEMS firm was randomly assigned one of several treatment groups or were assigned no treatment, which served as the control group. When one of the treated CEMS firms committed a violation, citizens filed an appeal through two different methods, depending on the treatment group: 1) private appeals where the citizen complained to either the firm or the local regulator; 2) public appeals where the citizens complained about the violation on Weibo, a popular Chinese social media platform comparable to Twitter/X. For each treatment group, a detailed script was prepared for the citizen volunteers to follow. The core content of these scripts was consistent across treatment groups but the wording was randomly varied. Within the public appeal group, half of the posts were randomly assigned to receive additional public attention via "likes" and "shares." The researchers compared the regulator's response across all the treatment groups.

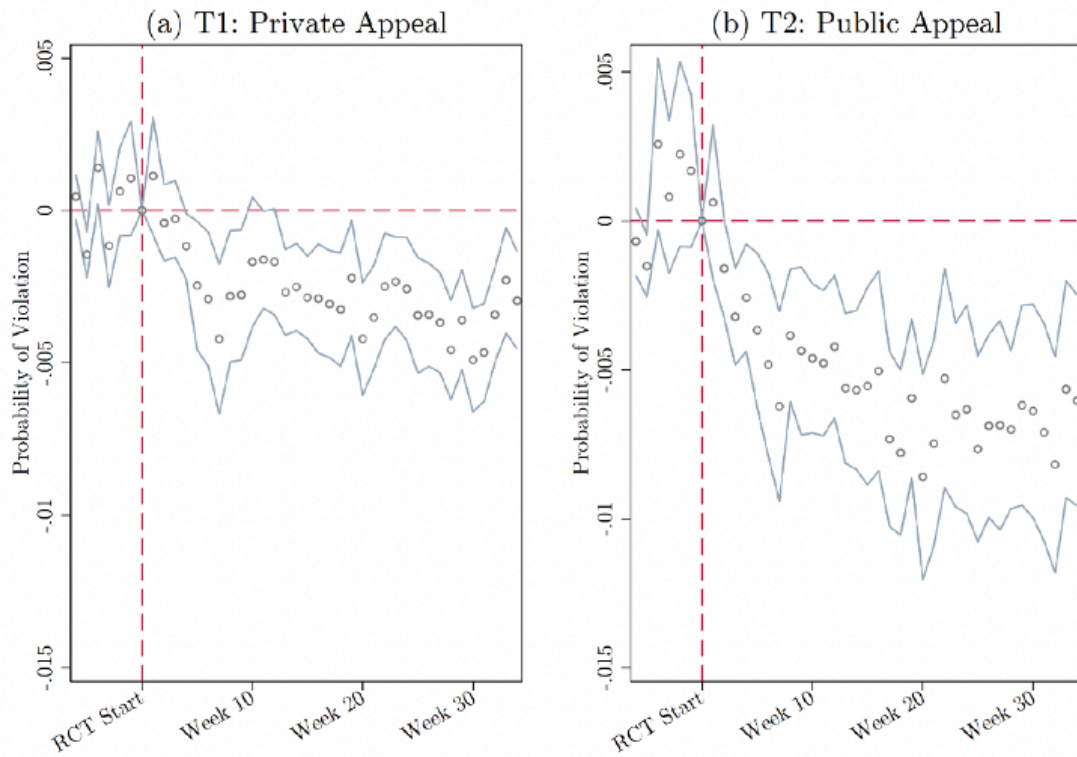


Fig. 1 The probability that a CEMS firm will commit a violation is shown during the experimental period for the private appeal and public appeal treatment groups. The probability of violation for the public appeal treatment group sees a larger decrease than the private appeal group.