

Citation

Weil, D. (2001). Assessing OSHA performance: New evidence from the construction industry. *Journal of Policy Analysis and Management*, 20(4), 651–674.

Highlights

- The study's objective was to examine the effect of Occupational Safety & Health Administration (OSHA) inspections on compliance behavior among construction contractors from 1987 to 1993. Although OSHA no longer operates as it did during this period, this study provides interesting historical context. The study also contains a descriptive analysis that examined whether OSHA regulatory standards were related to causes of injuries and fatalities (analysis not included in this summary).
- The study used regression models to analyze the change in compliance probability between the first and subsequent inspections for a given contractor and for a given contractor at a specific work site.
- The study found that the probability of citation decreased with each additional inspection, with the largest difference between the first and second inspections.
- The quality of causal evidence presented in this study is low. Although the study provides interesting descriptive information, it does not provide evidence of a causal effect of reinspections on compliance behavior.

OSHA Enforcement Activities and Outcomes

OSHA no longer operates as it did during the period of this study. Nevertheless, the study provides interesting historical context. At the time of this study, OSHA inspections were conducted for four reasons: as part of a general schedule of inspections targeted to high-hazard firms; if a complaint had been filed by employees or their representatives; if there had been an injury or fatality; or as a follow-up to a previous inspection. Complaint and follow-up inspections were generally less intensive than general inspections. An inspector could issue citations for violations of safety standards observed during the inspection. Depending on the nature of the violation(s), the inspector might also issue a monetary penalty. Those firms with more violations were more likely to receive subsequent inspections to determine whether the violations had been corrected.

The study examined the change in compliance probability between the first and subsequent inspections. According to the author's theoretical model, increasing adherence to standards, as measured by increasing compliance probability, should lead to a reduction in outcomes of interest, such as injury rates.

Features of the Study

The author estimated regression models to relate the probability of receiving a citation to the sequence of inspections conducted by OSHA. Specifically, the study used a logit model to compare the probability of citation at first, second, and higher-order inspections conducted by OSHA at a given work site from 1987 to 1993. The model controlled for the total number of inspections over the period of interest at all of a contractor's work sites, whether an inspection was triggered by an employee complaint or a serious accident, the union status of the contractor, an interaction between the complaint inspection indicator and the union indicator, the total OSHA penalties received by the contractor in the past, time spent previously on inspections, contractor size (measured by revenue), and industry- and year-fixed effects.

The author used data from OSHA's Integrated Management Information System, matched to data compiled from the *Engineering News Record's* annual publications (1987–1993) of top U.S. contractors across various segments of the construction industry. The analysis included 2,060 contractors and 27,694 observations at the work site level, with each observation representing an inspection.

Findings

- The study found that the probability of compliance with all workplace physical-condition standards was 6.3 percent higher during the second inspection than the first. However, subsequent inspections exhibited more modest differences in predicted compliance.
- The probability of compliance at a contractor's other sites was also higher during the second than the first inspection, suggesting spillover effects.

Considerations for Interpreting the Findings

The study's empirical strategy involved comparing the change in probability of compliance at different sequence numbers of inspections across work sites while controlling for some contractor characteristics. However, important differences between the work sites being compared could have remained. For instance, although the model controlled for the number of inspections across all of a given contractor's work sites, it did not account for differences in the number of inspections at an individual work site. Work sites inspected once might differ in important ways from those inspected more than once, even within the same contractor. More generally, the compliance probability at work sites can be observed only in those work sites inspected more than once. However, work sites inspected more than once are likely to have different underlying compliance behaviors.

Causal Evidence Rating

The quality of the causal evidence presented in this study is low. This means we are not confident that the changes in compliance probability at later inspections are the result of having been previously inspected. To provide more convincing causal evidence that meets CLEAR criteria, the study could have included a work site-level-fixed effect; this would allay concerns that there might have been underlying differences between the work sites being compared.