Citation


Highlights

- The study had two objectives: (1) to examine the effect of OSHA citations on injuries (method 1) and (2) to examine the effect of changes in OSHA inspections on changes in days of work lost because of injuries (method 2). Although OSHA no longer operates as it did during the study period, the study provides historical context for the program.

- Method 1 used a regression model to compare injuries across three firms from 1973 to 1980. Method 2 used a different regression model to compare changes in work days lost because of injuries from 1975 to 1976 to changes in OSHA inspections during the same period, using data at the industry-by-state level.

- The study found that firms had 35.8 fewer injuries in the years in which they received a citation; however, citations in past years were not significantly related to current year injuries. One additional OHSA inspection was associated with a 2.8 day reduction in the number of work days lost because of injuries.

- The quality of causal evidence presented by both methods in this study is low. This means we are not confident that the differences in workplace injuries or lost work days are attributable to OSHA citations or inspections.

OSHA Enforcement Activities and Outcomes

Method 1 examined the effect of OSHA citations in three firms producing metal products between 1973 and 1980. It examined the effect of receiving an OSHA citation in the beginning of the current year, the previous year, and the year before that. The outcome variable of interest was the total number of injuries in a given year. Method 2 examined the effect of changes in the number of OSHA inspections conducted in 1975 and 1976, aggregating data to the industry-state level. The outcome variable of interest was the change in annual lost work days due to injury from 1975 to 1976. Although OSHA no longer operates as it did during the study period, the study provides historical context for the program.

Features of the Study

For their first method, the authors used a regression model to consider the effect of OSHA citations on injury rates. The key explanatory variables were a set of indicators for receiving a citation in the current year, one year ago, and two years ago. The regression controlled for expected injuries and real maximum Workers' Compensation benefits measured at the state level. The data for the analysis were derived from the personnel files of the three firms and injury logs submitted by the firms to the Bureau of Labor Statistics from 1973 to 1980.
For their second method, the authors used a regression model to consider the effect of changes in OSHA inspections in a given industry and state on changes in lost workdays in that industry and state. Regressions controlled for the industry-state level changes in the maximum Workers’ Compensation payment, the number of establishments in operation, the number of hours per worker, and the number of production workers. The analysis used injury data from OSHA’s Office of Management Data Systems and inspection data, also from OSHA, by industry and state for 20 states and two-digit manufacturing industries with 5,000 or more production workers (a total of 167 industry-state observations). Data on industry characteristics by state were obtained from the Annual Survey of Manufacturers.

Findings

- Using method 1, the study found that firms had 35.8 fewer injuries in the years in which they received a citation; however, citations in past years were not significantly related to current year injuries.

- Using method 2, the study found that one additional OSHA inspection resulted in a 2.8 day reduction in the number of days lost because of injuries within a state and industry categorization.

Considerations for Interpreting the Findings

For method 1 of this study, the estimated differences in injuries could reflect underlying differences in safety levels or other factors between the plants being compared, and not the effect of receiving a citation. For example, suppose a plant had a large number of hazards and was working to improve its conditions. If the plant were inspected while these hazards were still being cleared, it would receive a citation. After the inspection, the plant’s number of injuries would decrease; however, the change would be due to the hazard abatement activities the firm began to conduct before the inspection and citation. Thus, we could not attribute the change in injuries to the inspection itself.

For method 2 of this study, a decrease in injury rates for industry-state observations receiving increased inspections may be caused by underlying differences between the industry-states being compared and not the inspections themselves. The study did not control for underlying factors at the state level or over time that might influence both inspection activity and injury rates.

Causal Evidence Rating

The quality of the causal evidence presented by both methods used in this study is low. For method 1, this means we are not confident that the difference in workplace injuries between plants receiving citations and plants not receiving citations is due to the citations themselves. For method 2, this means that we are not confident that changes in lost work days in more highly inspected industries and states are attributable to inspections. To provide more convincing causal evidence that meets CLEAR criteria for method 1, the study could have included firm fixed effects. For method 2, it could have included a more extensive set of controls for state and industry characteristics.