

### Citation

Smith, R. (1979). The impact of OSHA inspections on manufacturing injury rates. *Journal of Human Resources*, 14(2), 145-170.

### Highlights

- The study's objective was to examine the effect of OSHA inspections on injury rates in manufacturing firms in 1973 and 1974. Although OSHA no longer operates as it did during this period, this study provides historical context for changes that were later made to the program.
- The authors used a regression model to compare the differences in injury rates of firms that received inspections in March and April ("early") and those that received inspections in November and December ("late").
- The study found that in 1973, firms receiving early inspections had significantly lower injury rates that year than those that were inspected later in the year. However, in 1974, firms inspected early and late in the year had similar injury rates.
- The quality of causal evidence presented in this study is moderate because the study used a well-conducted nonexperimental design. This means we have confidence that the effects estimated in this study are attributable at least in part to OSHA inspections. However, as with any nonexperimental study design, other factors not accounted for in the study could also have contributed to the estimated effects.

### OSHA Enforcement Activities and Outcomes

The study examined the effect of OSHA inspections that occurred early in the year (March and April) relative to the effect of those that occurred late in the year (November and December) on injury rates in manufacturing firms in 1973 and 1974. Although OSHA no longer operates as it did during this period, this study provides historical context for changes that were later made to the program.

### Features of the Study

The study used a regression model to compare the differences in injury rates of firms that received inspections in March and April and those that received inspections in November and December. If inspections reduce injury rates, then firms inspected earlier in the year might have lower injury rates that year than firms inspected later in the year. The model controlled for differences between the types of firms that received inspections at different times of the year by including controls for injury rates in the previous year, employment rates, and industry.

The author used data compiled by the Bureau of Labor Statistics from OSHA Form 103 for 2,362 manufacturing plants in 1973 and 2,492 manufacturing plants in 1974.

## Findings

- In 1973, early OSHA inspections were associated with a statistically significant reduction in the annual injury rate of 16 percent.
- However, in 1974, early OSHA inspections had a smaller, statistically insignificant effect.

## Considerations for Interpreting the Findings

The author's estimation strategy requires that firms inspected early and late in the year (and inspections occurring early and late in the year) are not systematically different, after controlling for the other variables used in the regression. In 1978, OSHA began a new inspection procedure whereby firms that potentially had more egregious violations were targeted for inspection earlier in the year; this would imply that firms inspected in the spring were different from those inspected in the fall. However, these procedures were established after the period examined in this study.

## Causal Evidence Rating

The historical evidence indicates that firms inspected early in 1973 or 1974 were not systematically different from firms inspected later in those years. In addition, by controlling for industry, lagged injury rates, and changes in the number of employees, the authors accounted for important factors in their analysis. CLEAR rates the quality of causal evidence presented in this study as moderate because the study used a well-conducted nonexperimental design. This means we have confidence that the differences in injury rates are attributable at least in part to timing of inspections, although—as with any nonexperimental design—unobserved sources of bias not accounted for in the analysis could also have contributed to the estimated effects.