

### Citation

Curington, W. (1986). Safety regulation and workplace injuries. *Southern Economic Journal*, 53(1), 51–72.

### Highlights

- The study's objective was to examine the effect of the introduction of OSHA regulation in 1971 on the severity and frequency of workplace injuries in manufacturing industries in New York. 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 study used a regression model to examine the change in the frequency and severity of injuries from the period 1964 to 1970 compared with 1971 to 1976, which represent the time periods before and after the implementation of OSHA standards.
- The study found that the implementation of OSHA standards was not associated with a statistically significant reduction in the average frequency or the severity of all injuries. The study found a statistically significant association between implementation of OSHA standards and a reduction in "struck by machine" injuries.
- The quality of the causal evidence presented in this study is low. This means we are not confident that the differences in injuries from the period 1964 to 1970 compared with 1971 to 1976 are attributable to the introduction of OSHA standards.

### OSHA Enforcement Activities and Outcomes

The study examined the effect of the introduction of OSHA regulation in 1971 on the severity and frequency of injuries for manufacturing industries in New York. 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 following types of injuries were analyzed: all injuries, caught in machine, and struck by machine.

### Features of the Study

The study used a model with industry fixed effects to examine the change in the frequency and severity of injuries in manufacturing industries between 1964 to 1970 and 1971 to 1976; these represent the time periods before and after the implementation of OSHA standards. The model included controls for employment, hours, unionization, the capital intensity ratio, disability benefits, firm size, the new hire rate, and the fraction of production workers in the industry.

The authors used injury data from Workers' Compensation claims in New York for 18 manufacturing industries in New York from 1964 to 1976. Additional data for control variables came from the Annual Survey of Manufactures, Census of Manufactures, and Handbook of Labor Statistics.

## Findings

- The implementation of OSHA standards was not associated with a statistically significant reduction in the average frequency or the severity of all injuries.
- The only statistically significant relationship reported by the authors was between implementation of OSHA standards and a reduction in "struck by machine" injuries. The reduction was 0.17 injuries per 1,000 full-time-equivalent employees, representing a 13 percent reduction from the 1964 to 1970 average of 1.3 injuries per 1,000 employees.

## Considerations for Interpreting the Findings

This study compared industry-level injury rates before the implementation of OSHA standards in 1971 to the injury rates after their introduction. However, any estimated differences in the frequency and severity of injuries between these time periods may reflect changes over time in safety levels that would have occurred even without the introduction of OSHA standards. For example, they could reflect differences in the reporting of injuries; the adoption of new, safer production processes; or the invention of new, safer technologies. Therefore, it is impossible to disentangle the effect of the implementation of OSHA standards from changes that would have occurred over time even in the absence of those standards.

## Causal Evidence Rating

The quality of evidence presented in this study is low. This means we cannot be confident that the differences in injuries from before to after implementation of OSHA standards in 1971 are attributable solely to the introduction of those standards. To provide more convincing causal evidence that meets CLEAR criteria, the study could have examined the difference in injuries over the same time period for an appropriate comparison group. For example, if industries in a similar state were not affected by OSHA standards because they already had safety standards similar to those mandated by OSHA before 1971, the study could potentially have compared the changes over time in this state to the changes in New York to determine the effect of the policy.