Improving Workplace Safety

Standards or Insurance?

Thomas J. Kniesner and John D. Leeth

Work-related injuries or diseases are undesirable but inevitable by-products of making the goods and services consumers want. Labor markets establish implicit payments or compensating wage differentials for job-related health risks. Columnist Jack Anderson reported, "We sent our associate Vicki Warren to work undercover at the Washington Regional Bulk Mail Center, and when she saw the appalling conditions the facility's employees must work in, she asked them why they didn't quit. The universal response was that the pay was too good to pass up. The postal workers are, in effect, being paid to risk life and limb."

Although annual deaths from work-related injuries are typically only about one-fifth of the number of deaths from automobile accidents in the United States, elaborate institutions have evolved to enhance what are supposedly insufficient incentives for workplace safety. The two pillars of occupational safety policy in the United States are the states' workers' compensation insurance systems and the federal Occupational Safety and Health Administration (OSHA).

Because firms pay insurance premiums that reflect work-related injuries, workers' compensation provides financial incentives to construct safer workplaces. OSHA takes a more direct route to influencing industrial safety by establishing workplace standards that are enforced with inspections and fines for noncompliance.

We shall argue that OSHA's use of mandatory standard-setting accompanied by inspections and fines for noncompliance should be discontinued and the agency refocused. OSHA should specialize in researching job-related hazards and the links among hazardous substances and work-related diseases with its goal being to produce information and advice to firms and workers. Within limits workers' compensation insurance can be more completely experience-rated or supplemented by an injury tax on firms to give employers increased incentives to take safety-enhancing measures. Waiting periods for receiving workers' compensation benefits could also be extended to encourage greater safety efforts by workers, and changes could be made that would place more emphasis on determining fault.

OSHA during the 1970s and 1980s

The Occupational Safety and Health Act of 1970 established OSHA and mandated technology-based workplace standards to reduce work-related injuries and diseases. Several assumptions underpin mandatory OSHA standards. First, it is assumed that a government agency specializing in safety will know more about how safety is created than workers and employers focusing primarily on the production

Thomas J. Kniesner is a professor of economics at Indiana University at Bloomington. John D. Leeth is an associate professor of economics at Bentley College.

of some good or service. In addition, workers are assumed not to use information on workplace hazards or to use personal safety devices. Thus, OSHA standards often require plantwide capital investments by employers.

During the 1970s OSHA's activities grew rapidly as measured by personnel, budget, and regulatory output. In 1980 OSHA employed about 3,000 people and spent some $178 million. Throughout the 1970s OSHA spent just under $1.4 billion (in 1982 dollars) to establish and enforce workplace safety standards, including maximum acceptable exposure levels for arsenic, asbestos, benzene, cotton dust, lead, and noise.

Evidence of OSHA's inefficiency during the 1970s comes from both anecdotes and formal statistical analysis. Complying with the initial OSHA standards would have cost the average firm at least $300 per worker, but during the 1970s low inspection probabilities and low fines meant that the expected cost of noncompliance was only $17 per employee. Not surprisingly, many employers simply ignored OSHA's mandates until (or unless) they were caught.

In addition, as many as 75 percent of workplace accidents result from workers' carelessness or momentary physical hazards such as wet floors. OSHA's heavy-handed standards, which include changing machinery or the organization of production, have only a limited impact on these types of hazards. As a result of such complicating factors, numerous sophisticated statistical examinations of OSHA's effectiveness during the 1970s uncovered *no* evidence that OSHA had *any* safety-enhancing impact. Rarely is econometric evidence as uniform on an issue as it is on the question of OSHA's ineffectiveness.

The Reagan administration sought to create a leaner, more efficient agency. Employment at OSHA was cut by roughly 20 percent during the Reagan administration, and OSHA's real annual budget (in 1982 dollars) shrank steadily from a peak of $206 million in 1981 to under $180 million in 1987. Major new standards were issued more slowly, and firms were given some flexibility in what they could do to comply. While eight major new standards were issued during the Carter administration, only two were promulgated during Reagan's first term. The most important new standard during the Reagan years focused on reducing worker risk from grain handling, and employers were given a menu of acceptable alternatives for controlling dust.

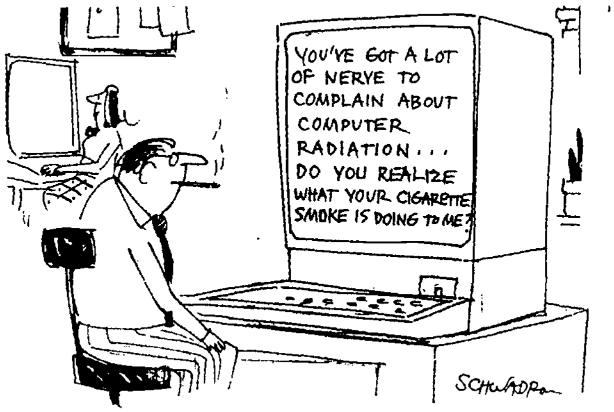
In the 1980s workplace health standards received more attention during inspections than they had earlier. Citations for violating health-related standards accounted for about 16 percent of all OSHA violations in 1983 compared with about 2 percent in 1976. The Reagan administration also redistributed inspections away from industries with high measured industrial injury rates. About half of OSHA inspections during 1983 focused on construction sites compared with one-fourth of total inspections typical of the Carter years.

In 1981 OSHA also began using firms' safety records to target inspections at firms with relatively unsafe performance. Thus, OSHA did not inspect firms with lost workday accident rates below the national average. (The records check procedure for selecting firms for inspections was recently discontinued, partly because of concerns that firms were underreporting injuries to avoid inspections.) Because of such changes, the actual number of workers covered by inspections dropped by over 40 percent during the Reagan administration. On average only 2 million to 3 million employees were covered by OSHA inspections in any given year during the early 1980s.

OSHA's use of mandatory standard-setting accompanied by inspections and fines for noncompliance should be discontinued. The agency should research job-related hazards and the links among hazardous substances and work-related diseases so that it can provide information and advice to firms and workers.

The structure and overall level of OSHA fines also changed notably during the 1980s. OSHA took a less confrontational, more consultative approach with firms. This led to fewer contested fines (3 percent in 1983 versus 21 percent in 1979). A greater proportion of assessed penalties were for serious violations, however (70 to 80 percent during 1982 and 1983 compared with 50 to 60 percent during the late 1970s). Overall, OSHA issued fewer citations and lower fines during the Reagan years than in the previous decade. Total financial penalties fell from about $26 million in 1980 to about $6 million in 1983.

Despite these changes, by the mid-1980s econometric studies attributed to OSHA inspections a 2 to 3 percent reduction in lost workdays per 100 workers per year. The safety-enhancing effects of



OSHA are still small overall, and in some research they may be the result of simply accumulating more years of data. Because of the low inspection rate (.5 percent of firms per year was typical for the 1980s), the few violations uncovered per inspection (two was typical), and the relatively low fines per violation ($60 per violation or $.60 per worker was typical), it seems unlikely that OSHA was much of a factor behind improved industrial safety in the United States during the 1980s.

Perhaps most important, financial incentives from other avenues swamp the relatively meager incentives that OSHA creates for safety. OSHA assessed some $6 million in fines during 1982. Meanwhile, firms paid approximately $10 billion in workers' compensation premiums, and an estimated $69 billion were paid in compensating wage differentials to workers in less than completely safe workplaces.

This latter factor raises an important point. As noted earlier, the approach taken by OSHA assumes that workers do not use information on workplace hazards. But this assumption is not borne out by research. Studies show that the typical U.S. worker in a job with the average chance of a work-related fatal injury receives 2 to 3 percent higher wages than a similar worker in a perfectly safe job. Similarly, a recent study examined the response of chemical workers to the possible introduction of new workplace substances. Workers told that they would be working with sodium bicarbonate, a very safe chemical, reduced their assessment of workplace hazards by half, while workers told that they would be working with either asbestos or TNT tripled their assessments of workplace hazards. No workers required extra compensation to handle sodium bicarbonate, but workers demanded an extra $3,000 to $5,000 per year to handle either asbestos or TNT. Although no workers threatened to quit because sodium bicarbonate was introduced into the workplace, a majority of workers said that they would quit if asbestos or TNT were introduced. Information can apparently increase workplace safety by influencing workers' risk assessments.

Finally, the vast majority of injury risks that stem from the work process, especially employee error, are not affected by the technological standards imposed by OSHA. It has been estimated that if every firm in the country were to comply fully with OSHA's standards (at a cost of some $100 billion to $500 billion in new investments), total injuries would be reduced by only 10 to 20 percent.

Reforming OSHA. As currently operated, OSHA is simply not effective at increasing worker safety in the United States, and the most commonly proposed reforms seem unlikely to address the fundamental problems. We recommend that OSHA stop issuing mandatory workplace standards, stop inspecting firms for compliance with federal standards, and stop imposing fines for noncompliance. OSHA would better serve the taxpayers at large and the firms and workers in relatively hazardous industries by using its resources to research the causes of industrial hazards and diseases and to provide information and guidelines to firms and workers concerning threshold levels of exposure to dangerous substances or workplace practices.

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Workers' Compensation and Workplace Safety

Workers' compensation is primarily a state-operated disability insurance program covering workers against losses caused by industrial accidents and some diseases. (Most industrial diseases are covered by Social Security Disability Insurance.) At the federal level, two programs cover federal employees and longshore and harbor workers. Federal legislation also provides benefits similar to workers' compensation to coal mine, railroad, and maritime employees. Regardless of who is at fault, employers must fully compensate employees for medical expenses and partially compensate them for lost wages caused by work-related injuries. While standards for replacing lost wages vary, most states require employers to replace two-thirds of weekly wages up to a maximum benefit of two-thirds of the state's average weekly wage for more serious injuries. In return, employees forgo their rights to sue employers when injuries occur. Most states allow employers to provide workers' compensation coverage by either purchasing insurance with a private provider or by self-insuring after proof of financial ability to pay.

A conflict exists between providing workplace safety and providing economic security for injured employees. Higher costs of workers' compensation raise the economic benefits of safety programs, but higher compensation benefits also reduce workers' economic losses from injuries and may discourage workers' safety efforts.

Before workers' compensation was introduced, employees had to prove that an injury was caused by the employer's negligence before they could recover damages. An employer could avoid a negligence ruling in court by demonstrating that the worker's injury resulted from his own actions, was an ordinary hazard of employment, or resulted from the carelessness of a coworker. Because legal defenses made damage recovery uncertain, the negligence system was viewed as providing insufficient compensation for injured workers and inadequate incentives for employers to provide reasonably safe work environments. In contrast, workers' compensation provides certain benefits for injured workers regardless of fault and, by shifting financial costs of accidents to the employer, provides an economic incentive for employers to reduce workplace hazards.

As measured by total expenditures, the workers' compensation system today is larger than unemployment insurance, aid to families with dependent children, and food stamps. In 1987 workers' compensation covered about 88.4 million workers, or 87 percent of the workforce, and paid more than $25 billion in total benefits. Including administrative expenses, the total cost of workers' compensation coverage in the United States averaged 1.98 percent of covered payroll in 1986.

Workers' compensation benefits rose rapidly during the 1970s and early 1980s under a threat of federal preemption of state systems. This rapid increase coupled with the disparity of benefits that continues across jurisdictions provides researchers with data regarding the impact of different levels of benefits on workplace safety. The majority of empirical studies has found that higher levels of wage replacement raise the number of workplace injuries reported. Typically a 10 percent increase in workers' compensation benefits increases reported injuries by about 4 percent.

Higher benefits also reduce the incentives for employees to return to work after industrial accidents. One group of researchers examined the duration of lower back injuries, which are difficult to verify, and found that a 10 percent increase in benefits raises the duration of temporary total disability claims by 3.8 percent. Another researcher investigating the average recovery period of all workers' compensation cases in Minnesota concluded that a 5 percent increase in benefits increases the time out of work by 8 percent. In sum, the growth in workers' compensation benefits in the United States may be responsible for more than half of the increase of temporary total and minor permanent partial disability injuries and as much as a third of the rise in the number of major permanent partial disability injuries reported during the 1970s.

This research suggests that a conflict exists between providing workplace safety and providing economic security for injured employees. Higher costs of workers' compensation raise the economic benefits of safety programs and encourage greater investments in workplace safety. But higher workers' compensation benefits also reduce workers' economic losses from injuries and may discourage individual workers' safety efforts—at least where minor injuries are concerned. It is clear that as benefits expand, employees are more likely to report an injury and file a workers' compensation claim. These offsetting economic incentives help explain why research suggests that the incentives to claim disability benefits can produce significant misimpressions of the influence of workers' compensation on workplace safety. Workers' reactions to increased benefits may mask the measured impact of employers' responses.

Thus, the positive relationship between benefits and injuries more likely reflects increased reports rather than actual increases in injuries. The reporting effect probably explains why the number of claims for muscular and skeletal injuries, such as sprains and lower back impairments, jumps on Monday mornings. By contrast, studies focusing on either fatal or extremely severe injuries have found that higher benefits improve safety. A study of recent data found that a 10 percent increase in workers' compensation benefits reduces occupational fatalities by 4 percent, a magnitude exceeding any estimate of OSHA's impact on workplace safety. Our research concerning the interactions between OSHA's regulatory activities and the workers' compensation insurance system shows little to be gained by coordinating the two programs. The influence of workers' compensation on workplace health and safety is largely independent of OSHA's activities.

Should Workers' Compensation Benefits Be Increased? Since 1970 the cost of total workers' compensation benefits has risen by more than 700 percent. Evidence suggests that employers and workers share the burden of the insurance premiums. Recent estimates indicate that a 10 percent increase in a state's maximum level of benefits, a weekly increase of $24, would reduce the average annual wage by about $83. Thus, it is not only employers who oppose higher benefits. Research shows that although workers desired and were willing to pay for higher disability insurance in the early 1970s, increases in coverage over the past ten years have largely satisfied most employees. Workers today do not desire and are unwilling to pay for further increases in workers' compensation coverage.

More complete experience rating augments the safety-enhancing abilities of workers' compensation and may discourage workers from filing spurious claims. It may also cause firms to monitor the recovery of injured workers more aggressively.

Because both employers and employees are unwilling to pay for higher benefits and because there are strong incentives to file spurious claims as benefits rise, we oppose a general increase in workers' compensation benefits to improve safety. In fact, a reduction in benefits may be warranted in the guise of longer waiting periods. Research demonstrates that the longer a state requires workers to be off the job before drawing benefits, the lower the reported injury rate, all else equal. A longer waiting period acts as an injury tax geared toward low-severity, high-frequency accidents—ones that workers may not take appropriate actions to avoid because the financial losses are small. Longer waiting periods before receiving workers' compensation benefits should encourage more careful worker behavior, which would especially reduce the low-severity, high-frequency injuries.

Expanding Experience Rating. Workers' compensation premiums consist of a manual rate reflecting average claims for the industry and an experience modification factor reflecting the firm's safety record. Primary losses (from high-frequency, low-severity injuries) influence a firm's experience modification factor depending on the firm's "credibility" factor. Small firms have low credibility factors; large firms have high credibility factors. Translated, differing credibility factors mean that additional injuries at a small firm will not have the same impact on its worker's compensation premiums as additional injuries at a large firm. For example, a Georgia machine tool manufacturer with 25 employees would save only $350 on workers' compensation premiums over three years by avoiding a $890 temporary total disability claim, but a Georgia manufacturer with 500 employees would save more than $1,500. This muted impact on small firms' insurance premiums implies that the incentives of smaller firms to invest in workplace safety are limited and that small firms have little reason to challenge the extent or work-relatedness of workers' injuries. Studies have found that small, imperfectly experience-rated firms have the largest increase in total worker injuries and the smallest reduction in fatalities when workers' compensation benefits rise.

More complete experience rating augments the safety-enhancing abilities of workers' compensation and may discourage workers from filing spurious claims. Increased experience rating may also cause firms to monitor the recovery of injured workers more aggressively and thus may reduce some of the cost pressures from higher benefits. The insurance industry views the duration of work injuries as beyond an employer's control, however, and claims of more than $2,000 are discounted in the experience-rating formula.

Meanwhile, employees of firms that self-insure (complete experience rating) return to work after an injury in 10 percent less time on average than employees of other firms. A rise in workers' compensation benefits also does not increase the average recovery time for workers in self-insured firms, but it does increase average recovery time in other firms. In addition, firms switching to self-insurance evaluate claims more carefully than even fully experience-rated firms. Self-insured firms demand more second opinions from physicians on the extent of an impairment and challenge the work-relatedness of an injury more frequently than do other firms.

As most other reviewers of the workers' compensation system, we advocate greater experience rating of premiums. Insurance premiums should reflect the level of workplace safety in both small and large establishments to encourage firms to invest in safety enhancements. Such "injury taxes" imposed on employers are preferred to safety and health regulations. Faced with an injury tax, firms will install additional safety equipment if the benefits of the equipment, that is, the costs of accidents and diseases avoided, exceed the costs of the equipment. Experience rating of insurance premiums would thus encourage firms to improve safety where economically justified and would avoid the economic waste from OSHA regulations that may require firms to install expensive, but ineffective, safety equipment. We also advocate placing a greater weight on accident severity in the experience-modification formula to encourage firms to monitor workers' compensation claims more closely.

Allowing Employees to Sue Employers for Negligence. The framers of workers' compensation argued that the sacrifice of common law rights to sue employers for negligence in exchange for a guarantee of compensation, regardless of fault, would improve workers' well-being. But recent studies have questioned this traditional view. One researcher has argued that the increased willingness of the courts to find in favor of the employee in the early 1900s was the single greatest force behind the workers' compensation insurance movement. In his view industrialists wanted workers' compensation legislation to limit their increasing liability for workplace injuries.

Allowing employees to sue their employers for negligence while still receiving workers' compensation benefits would increase an employer's expected cost from an injury and would encourage greater safety efforts. Under the current no-fault system, employers are liable for only a portion of the true costs of accidents and illnesses. Workers receive nothing for pain and suffering. Thus, employers may invest an insufficient amount in safety programs, given the current limited liability. Permitting workers to sue for pain and suffering would produce a more appropriate level of safety by forcing employers to bear the complete costs of injuries in situations where wages inadequately reflect uncompensated losses.

Negligence suits could also encourage greater safety by expanding compliance with OSHA's safety and health standards. If courts interpret OSHA violations as evidence of negligence, then employers attempting to avoid future suits would observe safety regulations. On the downside, permitting legal actions against employers would increase administrative and court expenses and add uncertainty to the compensation for injured workers. Nevertheless, we believe that the benefits of allowing negligence suits outweigh the possible costs.

Permitting workers to sue for pain and suffering would produce a more appropriate level of safety by forcing employers to bear the complete costs of injuries in situations where wages inadequately reflect uncompensated losses.

Instituting a Dual Insurance System. To some extent the workers' compensation system makes careful employers pay medical and income benefits when not at fault, and it only partially compensates careful employees for accident and disease costs. Similarly, workers' compensation insufficiently penalizes careless employers by requiring that they pay less than full compensation for injuries, and it insufficiently penalizes careless workers by providing them with compensation for injuries they caused. Under the current system nonnegligent employers and employees may overinvest in safety-enhancing actions while negligent employers and employees underinvest in such activities.

A dual insurance system that required both the employer and the employee to purchase insurance against the costs of industrial accidents and diseases would provide the same safety incentives as a strict negligence system while offering workers financial protection against lost income as does workers' compensation. An injured worker would immediately draw benefits from the employers' insurance carrier. Meanwhile, the two insurance companies would attempt to determine fault. If the worker was at fault, then the workers' insurance company would reimburse medical expenses and lost income. If the employer was at fault, then the employer's insurance would pay for medical expenses, lost income, and compensation for pain and suffering. If the worker's and the firm's insurance companies could not agree, the courts would assign fault and damages.

In addition to shifting accident and disease costs toward the negligent party, a dual insurance system could also provide workers additional information about workplace or occupational risks. Some employees have insufficient information about workplace hazards before taking a job. Research suggests that worker accident and illness rate differentials may account for as much as one-third of all quits in manufacturing. With a dual insurance system, the variation in insurance prices across employers and occupations, reflecting the variation in expected claims, would tell employees about the hazards they would face on the job. Workers could then either refuse employment or demand higher wages as compensation for accepting hazards. Such reactions would give employers additional incentives to invest in workplace safety programs.

Although a dual insurance system is conceptually appealing, many of its desirable properties could be duplicated in the current disability insurance system by allowing employees to sue for negligence and by extending the waiting period before workers receive disability insurance benefits, the reforms discussed earlier.

OSHA has had no major impact on workplace safety, nor has it shown the flexibility to achieve efficiency. Workers' compensation insurance represents an effective and efficient avenue for encouraging safety.

Conclusion

Evidence indicates that OSHA had no impact on safety during the 1970s and, at best, reduced lost workdays by 2 to 5 percent during the 1980s. Nor does OSHA exhibit the flexibility needed to achieve efficiency. Furthermore, recommending that new or current standards pass efficiency checks would only lead to a distracting debate over how such calculations should be made. We believe that OSHA, working with the National Institute for Occupational Safety and Health, would have a more positive effect on worker safety if its efforts were focused on conducting research into the causes of industrial accidents and diseases and on providing information and guidelines to firms and workers concerning unsafe workplace practices or threshold levels of exposure to dangerous substances.

Workers' compensation insurance, on the other hand, represents an effective and efficient avenue for encouraging safety. Because more workplace injuries raise a firm's cost of purchasing coverage, workers' compensation insurance acts as a tax on workplace injuries. If the cost of purchasing workers' compensation falls by more than the cost of installing new safety programs or installing new safety devices, then the firm will improve workplace safety. Workers' compensation insurance, when strongly experience rated, causes firms to conduct the calculations necessary to achieve efficient safety programs.

To improve workplace safety, the characteristics of workers' compensation that mimic an injury tax should be strengthened. Experience rating of insurance premiums should apply to both small and large firms and should reflect not only the frequency of injuries but also the severity of injuries. Employees should also be allowed to sue their employers for negligence. Allowing workers to sue for pain and suffering would improve the safety-inducing incentives of workers' compensation by making employers consider more carefully the full costs of workplace injuries. The fairness of the work-related disability insurance system would also be improved by shifting an important cost of injury to the party responsible.

Selected Readings

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