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# Compensating Workplace Toxic Torts

W. KIP VISCUSI

In recent years the focus of concern over workplace safety has shifted from the familiar problem of occupational injuries to the relatively unfamiliar problem of occupational disease. As science has found new links between toxic exposures on the job and illnesses that can crop up many years later, there has been a major wave of litigation; suits over deadly asbestos exposure have already bankrupted the leading producer of that mineral, the Manville Corporation. The lawsuits filed by Vietnam veterans against makers of the herbicide Agent Orange have brought the issue to an even wider public.

This essay analyzes why the current approaches to the occupational-disease problem are not working well and proposes a new response that might both provide fair compensation and promote efficient health-risk levels. Three key principles emerge from the analysis. First, proposals to compensate disease victims should be coordinated with direct regulation of workplace risk, because both influence employer decisions that affect worker health. Second, compensation plans should provide similar levels of income support to similarly situated victims. Third, policy initiatives should clearly distinguish between diseases that have already been contracted and those that will materialize in the future.

## *The Occupational-Disease Problem*

Occupational disease is a problem of staggering proportions for both workers and industry. Approximately 162,000 occupational illnesses are documented annually by the U.S. Bureau of Labor Statistics. This figure probably understates the prevalence of occupational disease, however, since other Department of Labor statistics

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indicate that some 2 million people are severely or partially disabled by occupational diseases, of whom 700,000 suffer long-term total disability. Other estimates indicate that 85,000 of these are victims of asbestos-related diseases alone.

Several factors make it difficult to know the full scope of the occupational-disease problem or the exact number of victims. For one thing, symptoms of many occupational illnesses do not appear until years after the exposure to the hazard. When disease victims can be identified, it may be difficult or impossible to ascertain the causes of these diseases. Although there are some "signature" diseases, such as mesothelioma, whose relationship to a particular kind of exposure is well established, most chronic illnesses can be caused by exposure to any of several substances or by participation in any of several activities. Lung cancer, for example, may result from air pollution, cigarette smoke, asbestos, or many other carcinogens. Thus it may be quite difficult to disentangle the occupational contribution to someone's disease.

Workers' compensation systems insure workers against the financial risks of most sudden job injuries but place a number of restrictions on coverage of slow-acting workplace disease. The requirement that workers show the job-relatedness of their ailment is often a major difficulty. Damage to the nervous system from lead exposure and gradual loss of hearing due to excessive noise exposure, for example, can be linked to a job less readily than an acute injury, such as being maimed by a punchpress.

During the 1970s and 1980s, many workers began circumventing these restrictions and obtaining additional compensation by filing third-party suits against manufacturers of hazardous workplace products. The potential liability of manufacturers in such suits is enormous, and its rapid growth may threaten entire industries. For instance, the estimated value of valid claims against the asbestos industry generated by past exposures exceeds the combined financial resources of all asbestos producers and their insurers. The bankruptcies resulting from such claims, moreover, could mean that there is no money left to compensate workers who later discover that their illnesses are related to asbestos. Developing a national compensation plan is crucial if only for the sake of these late-arriving victims.

### *Why Markets May Fail*

Theoretically, in a fully competitive employment market, market transactions between employers and employees could lead to efficient levels of health hazards and equitable compensation for diseased workers. Workers will not accept jobs posing known risks, unless the position offers some additional, attractive offsetting feature. Economists have sought to measure the additional wage compensation that these positions command, holding other attributes of the job constant. Overall evidence indicates that there are substantial risk premiums on the order of \$3 million to \$4 million per fatality and \$30,000 per nonfatal injury. These risk premiums in turn establish a safety incentive for the firm. The firm can reduce its wage costs through an investment in greater workplace safety. When this market mechanism is fully effective, government intervention is unnecessary and should

be avoided. For risk premiums to work properly, however, workers must be cognizant of the potential risks they face. This may be a particular problem in the case of occupational disease.

Because of the problems of multiple causation, the latency factor, and the difficulty of tracing environmental causes of disease, such risks are typically not as apparent as safety hazards, such as slippery staircases. In an extreme case, workers may know nothing of the particular toxic risk to which they are being exposed. Unlike accidental injury, health damage cannot always be observed by co-workers and employers even after it happens, so that experience will not necessarily give all sides some idea of the risks involved. When health hazards are hidden, workers fail to demand an adequate wage premium for risk, and employers provide too little control of health risks.

If, however, workers are warned of low-probability health risks, they may overreact. A series of studies has indicated that individuals systematically overassess low-probability risks of a magnitude comparable to that of workplace health risks. In particular, individuals display a systematic tendency to overestimate the fatality risks from botulism, tornadoes, floods, pregnancy, and other low-probability events. In addition, a recent study of consumer responses to risks suggests that biased perceptions of this sort lead to alarmist market responses.<sup>1</sup> Consumers who are apprised of annual product risks of around 1 in 100,000 (or less) acted as if these risks were considerably larger in deciding how much of a price cut was worth trading off for the risk.

The warning problem is thus double-edged. Unless workers are informed about the potential danger, risk levels will be too great. Employers have little incentive to provide this warning, since doing so would boost the wage rate they must pay, and this wage cost will often exceed any reduction in injury costs to the firm. Government regulations consequently must require that it be provided. On the other hand, any hazard-warning program must be designed to convey risk information without inducing undue alarm.

### *Current Regulatory and Compensation Policies*

The information problem and other possible market failures create a potentially productive role for government action. The Occupational Safety and Health Administration (OSHA) enforces regulations designed to lower disease risk, and tort litigation also provides a major safety incentive. On the compensation front, workers' compensation and liability awards have aided many victims, though by no means all, and various legislative proposals would reach and compensate some additional victims. Unfortunately, these haphazard approaches do not add up to a coherent strategy for achieving either efficient levels of health risk or fair compensation for all disease victims.

OSHA, created in 1970, is responsible for ensuring that "so far as possible every working man and woman in the Nation [has] safe and healthful working conditions."<sup>2</sup> Although the agency has issued many regulations designed to reduce work-

place exposure to hazardous substances, these rules have been overly costly for what they have achieved and largely ineffective.<sup>3</sup> Moreover, OSHA regulations are laid atop other programs that also influence the level of workplace health risks, so that the net impact of these efforts may be both unintended and undesirable.

OSHA has taken a number of steps to regulate workplace exposure to hazardous substances. For instance, it has regulated asbestos, the leading workplace carcinogen, since 1972. The agency has long been criticized for the rigid "command-and-control" format of its regulations, which reduces employers' flexibility and prevents them from meeting health goals in the most cost-effective manner. In many cases the agency would be better off issuing performance standards rather than mandating specific technological methods to reduce exposure. The best ways to reduce for employers the risk of byssinosis from cotton dust, for example, may be to issue disposable masks to workers and rotate workers who display early signs of the disease, rather than install dust-abatement machinery.

OSHA has also been castigated for its refusal to calculate whether the benefits of its regulations exceed the costs and for its dismal enforcement record. Not surprisingly, most studies show that it has had only marginal success in improving workplace health and safety. But its effectiveness seems to have improved since its early years, and in the health area it has had a notable success story in securing compliance with its cotton-dust standard.

Although the agency regulates a number of workplace carcinogens, it has set workplace standards for only a small fraction of the more than 2,000 such substances that have been identified. To fill this gap, it has begun to rely on the warning principle. Recently it started requiring worker-education programs and the labeling of hazardous chemicals. The original justification behind the rule requiring warning labels was entirely speculative, but it has been borne out by experimental studies. Well-designed warnings can alter workers' risk perceptions in the desired fashion, causing them to demand rationally higher wage premiums for risky work and influencing decisions to accept employment.<sup>4</sup> To be successful, however, a labeling effort must provide workers with new information they can use; it is much less successful if it advises workers to behave differently without providing them with a factual basis for doing so. For example, telling individuals that they should wear protective goggles will not be effective. However, an explanation that indicates the likely source of the eye injury and the role of goggles in reducing the risk will be much more influential.

OSHA's direct regulations and warning requirements can address only a part of the occupational-disease problem. The agency has no authority to compensate victims and cannot control the effects of the existing workers' compensation and tort systems on levels of health risk. A separate compensation system is clearly needed, one that will not interfere with attempts to regulate health hazards and that will provide an acceptable minimum of income support to disease victims.

Formal compensation for workplace injuries is supposed to be handled through the workers' compensation system. Before such programs were enacted, workers who were injured on the job or contracted a job-related disease could bring tort

action against their employers. If the worker could prove that the employer was negligent, that this negligence caused the injury, and that the worker's own conduct had not contributed to the problem, the employee would have a good chance of winning a judgment. Because of the difficulties in proving all three steps, however, many workers went uncompensated.

Eventually, all states established workers' compensation programs to replace tort suits against employers. Under the programs, an injured worker does not normally have the right to bring a tort suit against the employer for negligence. Instead he files a claim against a central fund. This claim need not allege employer negligence, which makes it easier and less costly to obtain an award. However, unlike a successful tort recovery, a workers' compensation award makes no attempt to restore to the claimant the full value of the loss. It does not compensate for pain and suffering, and it compensates for physical losses like the loss of an arm at significantly lower rates than juries usually do.

Two other features of workers' compensation systems impede adequate recovery for toxic exposures. First, to qualify for workers' compensation, a claimant must show that he suffered an injury arising from and in the course of employment. This causation requirement is fairly straightforward in most work-related injuries but much more problematic in many occupational-disease cases. Most workers' compensation-system statutes will not pay for a disease unless it is "peculiar to the worker's occupation"<sup>5</sup> and not simply one of the "ordinary diseases of life."<sup>6</sup> Proving the workplace link may be extremely difficult, especially since records on the worker's history of exposure to hazardous substances may never have been kept or may have been lost during the period of the disease.

The second impediment to adequate recovery is the requirement that the worker report the injury and file a claim within a specified period. Even if evidence on the other points is readily available, a worker may still fail to collect because the statute of limitations has expired before his condition is diagnosed. Courts in some states have sought to get around this problem by ruling that the "accident" that starts the statute-of-limitations clock ticking may be defined as the onset of the worker's disability or his discovery of its cause, rather than the original exposure to the hazard.

Statistics on actual compensation show that these limitations lead to inequities in the treatment of equally deserving claimants. Victims of occupational injuries are more successful in securing benefits than victims of occupational disease. One report found that employers are six times more likely to contest a disease claim than an accident claim. Furthermore, a worker disabled by an occupational disease waits an average of a year before receiving benefits, while a worker bringing an injury claim waits only two months. Statistics also show that victims of occupational illnesses receive lower benefits, on average, than victims of occupational accidents. This discrepancy occurs in part because it is hard to demonstrate that a disease is job-related and in part because disease victims are more likely to accept negotiated settlements.

In addition, these statistics record only the outcomes of claims actually filed.

The difficulty of proving that a disease is job-related keeps many workers from ever filing compensation claims. When job-relatedness is easier to prove, the success rate for compensation increases dramatically. The asbestos situation provides a good example: 61 percent of the workers' compensation claims filed for asbestos-related deaths have been fully awarded, 25 percent have led to less compensation than was sought, 3 percent have been denied, and 1 percent have been dropped.

The job-relatedness requirement also results in dramatic disparities between the levels of compensation that equally deserving disease victims get. Some receive full workers' compensation awards, while others go away empty-handed. And, of course, persons who contract similar diseases from nonoccupational sources cannot obtain workers' compensation at all. They may have either less or more recourse than diseased workers, depending on whether there is anyone for them to sue.

Aside from these inequities, workers' compensation programs also fail to promote efficient levels of health risk. The plans are funded by employer premiums that are often based only loosely on workplace health and safety conditions. The premiums therefore provide relatively little incentive for companies to provide a healthful work environment—far less than, for example, direct taxes on hazardous conditions would.

Although workers' compensation programs forbid most suits against employers, they do not prevent workers from bringing products-liability claims against the manufacturers of the hazardous materials and technology to which they were exposed in the workplace. Manufacturers of motor vehicles and construction equipment, for example, are often sued after such accidents as the overturning of a vehicle, on the grounds that they should have provided better warnings or installed the sort of safety seat that protects the driver if the vehicle is tipped over. Depending on where the lawsuit is filed, they can seek relief under negligence or strict-liability theory. Even under strict-liability theory, which is more favorable to plaintiffs, a victim must establish that the product was defective, that the defect proximately caused the injury, and that the defendant was the manufacturer of the defective product. Each of these elements can be unusually hard to prove in an occupational-disease case.

Under strict-liability doctrine, a product is defective if it is unreasonably dangerous. Consumer products are typically judged to be so because of a manufacturing flaw or an inherently unsafe product design, which may not be the problem with a chemical. However, a product may also be judged unreasonably dangerous if the manufacturer fails to warn of its dangers or instruct users how to use it safely. Failure to warn has been the basis for most cases in which manufacturers have been held liable for occupational disease caused by their products. The victim must thus establish that the manufacturer knew or should have known about the hazards at the time of the failure to warn—a difficult task, since the link between many products and occupational diseases has been established only recently. A manufacturer can also defend against a warning theory by presenting evidence that the victim was aware of the risk and accepted it voluntarily.

Under the second proof requirement, a plaintiff must show that the hazardous product was the proximate cause of his illness. As we have seen, proving what caused an occupational disease can be extremely difficult. Finally, under the third proof requirement, the plaintiff must show that the defendant was the one who manufactured the hazardous product. This burden is easy to meet in some cases but very difficult in others. Consider, for example, a worker who has been exposed to asbestos while working for several different employers, each of whom had bought asbestos from several different suppliers. Some courts allow the worker to sue all the suppliers; others do not.

Other impediments can also prevent recovery. The statute of limitations may have expired, as in the workers' compensation case, before the victim realized the extent or the cause of his illness. Recovery may also be thwarted if the defendant is no longer in business or has been driven bankrupt by unanticipated tort claims, and insurance policies have been exhausted. Finally, workers may be out of luck if their own employer was the one who manufactured the hazardous product, since workers' compensation is the exclusive remedy in such cases. Despite these limits on recovery, products-liability suits have become the major source of compensation for occupational-disease victims.

A policy relying on such lawsuits is inherently inequitable. First, suits by workers with comparable work-related diseases may have different outcomes because of such unpredictable factors as the length of the latency period or the availability of evidence showing whose products caused the illness. Second, recovery in successful suits may vary widely among equally deserving victims. Third, because the products-liability system is not coordinated with other forms of compensation, a successful plaintiff may receive not only a substantial tort judgment but also workers' compensation and Social Security payments. Such multiple awards waste resources that could be distributed to victims who now go empty-handed.

Products liability also fails to establish efficient incentives for many workplace-health decisions, because the judgment occurs long after the tort. Tort liability has the strongest incentive effect when the judgment follows closely upon the tortious behavior. It then provides immediate feedback that allows the manufacturer to consider all costs in reaching product-safety decisions. But over a period of decades there is no assurance that a company will remain in business, and if it does the present managers are likely to have long since departed. Performance evaluations are seldom based on remote legal obligations.

In short, products-liability law is striving both to compensate disease victims and to deter workplace health risks — and not doing either well. A better way would be to address each goal separately.

One possibility is to extend workers' compensation and to establish a comparable system for health risks. The appeal of such an approach stems from the many attractive features of workers' compensation. First, the program is generally viewed as an efficient way to get resources to accident victims. At present, firms pay premiums in excess of \$20 billion, 80 percent of which is paid to accident victims — a much better record than that of tort liability, for which the court costs and lawyers'

fees are considerable. Second, workers know about and clearly value the benefits of workers' compensation, leading them to demand less of a wage premium for hazardous work. Indeed, recent studies done by this writer with Michael Moore indicate that on average workers' compensation more than pays for itself from the employer's point of view, although recent increases in benefits have not been self-financing on the margin. Third, workers' compensation premiums are linked to a firm's safety and thus function as a form of injury tax. Indeed, the author's recent study with Moore indicates that worker fatality rates would be 72 percent higher in the absence of workers' compensation. These safety incentives dwarf the estimates of OSHA's contribution to safety improvement.

The desire to reap similar benefits no doubt has contributed to the pressure to extend workers' compensation to provide greater coverage of health risks. But none of the system's three major advantages are likely to translate easily from the accident to the health case. The relative efficiency of workers' compensation in transferring income stems from the comparative ease of showing a link between an acute injury and the job. For diseases with multiple causation, the link is more tenuous. Indeed, where the present workers' compensation system covers illnesses at all it tends to take much longer to process illness claims than injury claims. Even in the case of potent carcinogens, such as asbestos, other sources of lung cancer may cause three to four times as many illnesses among affected workers as the job exposure. Any program targeted to health risks related to the job would run into enormous problems of determining causality.

The second advantage of workers' compensation—it is highly valued by employees—would also hold for the health risks, at least after the fact. There would not, however, be a wage offset if workers do not perceive the health risk while on the job and thus anticipate being covered by an insurance program that is particularly relevant to their situation. To the extent that market levels of health risks are seen as less than ideal because workers do not perceive health risks, there will be a similar weakness in the mechanism that leads to a wage offset.

The third advantage of workers' compensation—the safety-incentive effect—also assumes that there will be an opportunity for experience rating of employers. If instead the assignment of causality is by industry group, there will be no targeted incentives for individual firms; when a hazard leads to claims, the incentive will simply be for the whole industry to lower its output. These are not the mere conjectures of economic theory. All three disappointments have been realized in the case of the compensation effort for one narrowly defined ailment—black-lung disease in coal miners.

The Black Lung Benefits Act of 1969 provides benefits to coal miners struck with the disease and their survivors. The program compensates victims of pneumoconiosis, "a chronic dust disease of the lung . . . arising out of coal mine employment."<sup>7</sup> To receive benefits, the miner must show that he is totally disabled, that the disability is caused by pneumoconiosis, and that the pneumoconiosis resulted from exposure to coal dust. The benefit provided is an annuity that is independent of the particular claimant's wages.

In contrast to state workers' compensation plans, the black-lung program eases claimants' burden of proof by incorporating rebuttable presumptions in their favor. In the original act, black lung was presumed to be the cause of death if a diseased miner had worked in a coal mine for at least ten years. Furthermore, a worker was presumed to be totally disabled by black-lung disease if he presented medical evidence of lesions in the lung and he had worked in mines for ten years. In 1972, the law was expanded so that all respiratory and pulmonary impairments in workers with fifteen years of coal-mining employment were considered to be pneumoconiosis.

The black-lung experience shows how hard it is to estimate accurately the cost of a compensation scheme. Its annual outlays mushroomed from \$150 million in 1970 to more than \$1 billion by the late 1970s, in part because of unexpectedly rapid growth in the number of claims filed. Significantly, the possibility of such cost overruns should be much smaller in coal mining, where there is good information about miners and black-lung risks, than in wider programs that attempt to track large, mobile populations of workers exposed to minute but harmful amounts of hazardous substances in many different workplaces.

The black-lung program is funded by a tax on coal production: \$1 a ton for underground mines and 50 cents a ton for surface mines. The tax is ineffective at reducing hazards, because it is not explicitly linked either to workplace conditions or to the incidence of disease. Instead of providing direct incentives for mining companies to improve workplace health standards, the production tax tends merely to reduce their overall output.

The nature of black-lung compensation, moreover, raises equity concerns. Although it has eliminated many of the inequities between black-lung victims arising from the difficulty of proving causation, it has probably compensated many victims of diseases other than black lung, and it creates an undesirable new disparity between program beneficiaries and victims of equally severe illnesses that cannot plausibly be ascribed to black lung.

Perhaps because of the disappointing record of black-lung compensation, Congress has not yet enacted any of several proposals that would extend its model into new areas of compensation. One such proposal is H.R. 3175, introduced in 1983 by Representative George Miller (D-Calif.), which would provide money for disease victims and exempt manufacturers of hazardous substances from products-liability suits. Unfortunately, proposals of this sort have an enormous cost, and because they fail to separate the objectives of fair compensation and efficient risk control, they may achieve neither.

The eligibility standards for compensation under the Miller bill are relatively liberal. It would establish a series of presumptions for asbestos-related diseases that would make proof of causation much easier than it is under workers' compensation or products liability. It would grant workers an irrebuttable presumption that conditions in asbestos workers that are diagnosed as asbestosis or mesothelioma were caused by exposure to workplace asbestos. The bill would also presume that lung cancer in asbestos workers was caused by exposure to the

mineral, but this presumption would be irrebuttable only if there were evidence showing that asbestos had caused changes in the lung or pleura.

The liberal presumptions could have an enormous economic effect. Under H.R. 3175, the total cost of compensating fatalities resulting from asbestos exposure is estimated at between \$16 billion and \$30 billion (in present-value terms). It may be impossible, however, to determine which cases of lung cancer in asbestos workers are caused by asbestos and which by other factors. As a result, all cases of lung cancer in asbestos workers could be compensable, raising the total cost of the program to between \$54 billion and \$108 billion. By comparison, estimates of the cost of asbestos products-liability suits (again in present-value terms) range between \$8 billion and \$91 billion under comparable assumptions. Thus, if its presumptions were applied liberally, H.R. 3175 might inflict greater costs on manufacturers than the current products-liability systems, forcing many more of them out of business.

The effect the proposal would have on reducing health risks remains uncertain, because the details of the funding mechanism are not specified. In all likelihood, the approach would take the form of an output tax, as in the black-lung and "Superfund" programs. Such a tax would reduce total work hazards somewhat by reducing the output of the affected companies. However, it would have little direct influence on the health risks of remaining workers, because it would not vary with workplace health conditions; employers who invested heavily in worker protection would pay just as much into the fund as employers that neglected to do so.

### *A Proposed Strategy*

Past proposals have tended to ignore the effect of compensation schemes on employer incentives. Yet such effects are one of the major policy variables at work. For example, suppose the present combination of market transactions and OSHA regulations is thought to provide too little health protection to workers. Then a compensation scheme should not only compensate workers but also encourage employers to take additional health precautions, by tying the tax to the riskiness of present operations. For instance, the hazards involved in the construction procedures used for different building designs may not be fully known to the workers but can be captured in the workers' compensation premium levels, thus generating a safety incentive. Conversely, if market transactions and OSHA health regulations already provide the optimal level of exposure to a given risk, funding an additional compensation program through a risk-based tax would lead employers to provide excessive precautions, in the sense that their cost would exceed their value to workers in health terms. In that case, compensation taxes should not be designed to influence employer behavior. In short, occupational-disease policy should take into account the incentive effects of compensation plans on risk levels and coordinate these effects with the incentives created by regulatory programs.

Some hazardous substances at present may already be the target of not simply adequate regulation but substantial overregulation. Consider the case of asbestos

itself. After a long period of regulatory inaction when thousands of lives could have been saved inexpensively, the government has now overreacted by trying to cut exposure virtually to zero. OSHA's asbestos rules cost on average \$89.3 million for every life saved, and the Environmental Protection Agency (EPA) has proposed regulations that would impose a cost on average of \$104.2 million for every life saved.

Meanwhile, having been identified as a highly risky substance, asbestos is now being targeted by many other societal institutions as well, including market forces and insurance pressures, both of which create important incentives for safety. Today's widespread awareness of asbestos means that workers demand substantial risk premiums to work with it and often refuse to be exposed at any price. Workers' compensation insurance premiums for workers in asbestos-related industries have also skyrocketed, bolstering the incentive for safety. A legislative compensation scheme linked to current asbestos exposures would add entirely superfluous safety incentives while discouraging those uses that are still prudent and justified.

This pattern of excessively stringent regulation may not be unique to asbestos. Other workplace hazards, such as arsenic exposures in glass manufacturing, are stringently regulated by OSHA (\$92.5 million per life saved), and the EPA has proposed additional regulation. Unfortunately, there is no coordinating mechanism to ensure that the risk level that results from these diverse efforts is appropriate or to keep society from responding excessively to a few targeted hazards while ignoring others.

The goal of a coordinated compensation policy should be to ensure that all victims are receiving at least acceptable minimum payments and that comparable groups of victims are compensated similarly. Neither objective is currently met. Perhaps the fundamental issue is whether society should compensate victims of occupational diseases more generously than victims of nonoccupational diseases. If not, then the focus should be on appropriate social insurance for all disease victims rather than on particularly generous coverage for victims fortunate enough to be targeted for special coverage.

Finally, decision makers should aim to help not only victims who have already contracted diseases but also those who will contract them in the future. A penalty tax linked to past exposures may punish sins, but it will not create an incentive to reduce current and future risk levels, except indirectly by lowering an industry's output. By contrast, a penalty tax linked to present exposure levels will encourage employers to reduce workplace health risks to the point that the marginal cost of additional precautions equals the tax. The latter method is far more efficient at optimizing risk-reduction investments, encouraging employers to clean up their operations rather than just close them down.

A strategy for achieving both fair compensation and efficient levels of health risk would combine two types of financing: a targeted tax to help victims of current hazards and a broad-based program to help victims of past exposures, who would be compensated through the Social Security system or some other social-insurance fund financed by a general payroll tax.

Relying on a broad-based fund to compensate past victims would have several advantages. First, if a disease has already been set in motion, the only remaining issue is how to compensate victims; risk-based taxes do not change incentives and are therefore irrelevant from an efficiency standpoint. In addition, the Social Security program already exists and, unlike workers' compensation, does not require a showing of causality. Social Security disability insurance provides income support for workers with long-term disabilities, whatever the cause. Since benefits would be generally available, inequitable distinctions could be avoided. Victims of occupational disease would be treated the same as victims of diseases caused by, say, contact with hazardous wastes, or those of unknown origin – which is as it should be. In general, compensation should depend on how a disease affects its victim, not on how it was contracted.

A program funded through a broad-based payroll tax like the Social Security disability program is in one sense unfair, compared with a program funded through a targeted tax: companies that were not responsible for a worker's disease will pay into the fund the same as those that were responsible. On the other hand, this perceived inequity arises only when responsible companies can be identified. That is generally impossible because of the difficulties mentioned earlier in making causal connections in the realm of occupational disease. And under this proposal, moreover, manufacturers that could be identified would still face products-liability suits from workers. The only difference would be that the amount of coverage already received would be deducted from the amount of any award.

Workplace conditions should be regulated through a combination of minimum standards and penalty taxes based on the current hazards in the workplace. To improve the operation of a workplace market for risk, OSHA should strictly enforce its hazard-communication regulation and extend it to other industries (such as construction). OSHA should also adopt a system of direct regulation that integrates minimum performance standards with graduated hazard penalties so that companies can forgo safety improvements that are inordinately expensive, given the benefits that will arise. Thus, the objective of regulatory enforcement should be not to compel compliance with an arbitrary standard but to induce firms to make whichever safety investments are most feasible to attain the level of safety society seeks. Beneficiaries of this plan would still be able to bring products-liability suits against companies, providing further deterrent force, although the level of such awards would be reduced by any disability payments. The compensation scheme itself, however, would not penalize companies for conditions that no longer exist.

The strategy set forth here is not a cure-all; the problem is too complex to be solved that easily. But by separating compensation from deterrence, it provides a framework to begin addressing occupational disease in a manner that looks forward rather than backward. Unlike the current reliance on liability suits or the various compensation schemes being advanced in Congress, it offers the hope of compensating victims without the specter of randomness or ruinous expense and encouraging safety without distorting the operation of those workplaces that are already optimally safe.

## NOTES

1. W. Kip Viscusi and Wesley A. Magat, *Learning about Risk: Consumer and Worker Responses to Hazard Information* (Cambridge: Harvard University Press, 1987).
2. Occupational Safety and Health Act of 1970, Pub. Law No. 91-596, SS. 2, 84 Stat. 1590 (1070) (codified at 29 U.S.C. SS. 651 [1983]).
3. W. Kip Viscusi, *Risk by Choice: Regulating Health and Safety in the Workplace* (Cambridge: Harvard University Press, 1983).
4. Viscusi and Magat.
5. See, e.g., *Alabama Code* SS. 25-5-111 (1975); *Michigan Comp. Laws Ann.* SS. 418.401 (6) (West. Supp. 1984).
6. See, e.g., *Georgia Code Ann.* SS. 34-9-280 (3) (1982); *Virginia Code* SS. 34-9-280 (3) (1982); *Virginia Code* SS. 65.1-46 (1980).
7. 30 U.S.C. SS. 902(b).