Liability Rules and Risk Sharing in Environmental and Resource Policy: Discussion

Robert Cooter

Each of these three papers has the same form: a small theoretical model concerning environmental risks or hazardous wastes is at the core, and a discussion of policy implications is in the conclusion. All three papers contain results that are interesting and warrant discussion, so I will describe the core of each paper and then try to draw some conclusions about them.

The Core of the Three Papers

Two of the papers—Segerson’s paper and the paper by Johnson and Ulen—are motivated by the same puzzle: Why are polluters subject to government regulation and also to liability? Is there something about hazardous wastes that requires a public remedy through government regulation and also a private remedy through suits in tort or property? The answers presented in the two papers are quite different.

Segerson explores optimal risk bearing and optimal abatement. (I will use the terms “abatement of pollution” or “precaution against accidents” interchangeably.) She begins by separating these two considerations and constructing a model in which the amount of pollution is fixed but the affected parties have different attitudes toward risk. She then shows that the socially efficient allocation of damages depends upon who is more risk averse.

Next she explores the interaction between risk bearing and abatement. She relaxes the assumption that polluters cannot abate and concludes that there is no allocation of damages that will achieve both optimal risk allocation and optimal incentives for abatement. In brief, you cannot kill two birds with one stone. She concludes that in order to achieve optimal risk allocation and optimal abatement simultaneously, policy makers need two stones—both a private law remedy and a regulatory remedy.

Her propositions are formally correct, but there is a slip in their interpretation. It is, of course, true that achieving her two policy goals requires two policy instruments. It is not true, however, that private law has at its disposal only the single remedy of liability. Rather, private law also has at its disposal standards of behavior, such as the negligence standard. Thus, the courts can determine both a standard of care and a level of liability for harm resulting from its violation. Indeed, the courts can shape a negligence rule so that it is almost identical to a regulation backed by a fine, except that the plaintiff gets the damages and the government keeps the fines. In both legal regimes there is contingent liability—failure to meet a legal standard gives rise to liability for damages in tort or liability for a fine under the regulation. There are some salient differences between these legal regimes, but they are not captured by the distinction between liability and standards.

In effect, Segerson has derived perfectly sound results contrasting strict liability with liability contingent upon a legal standard. To be specific, she has shown that a rule of strict liability cannot achieve both the optimal allocation of risk and optimal incentives for abatement. The contrast between strict liability and negligence will be discussed later in detail since it is central to the Johnson and Ulen paper, but first there is another point made by Segerson that is important. She remarks that producers of hazardous wastes might have access to forms of precaution that are unobservable by authorities. Being unobservable, they
could not be subject to enforceable standards. Generalizing, part of the cost of enforcing a legal standard is determining whether there is compliance with it, and some determinations may be prohibitively expensive. Under these circumstances, Segerson correctly concludes that a rule of strict liability will provide incentives for precaution without relying upon an authoritative determination of the extent of abatement.

Johnson and Ulen begin by recapitulating some familiar results in the economic analysis of torts concerning the conditions under which a rule of strict liability or a rule of negligence will provide incentives for efficient precaution. Unilateral precaution, which means that efficiency requires precaution by only one party, is contrasted with bilateral precaution, which means that efficiency requires precaution by two parties. Johnson and Ulen note that strict liability is typically the socially preferred rule when precaution is unilateral on the part of potential injurers, whereas a negligence rule is typically the socially preferred rule when precaution is unilateral on the part of potential injurers, whereas a negligence rule is typically the socially preferred rule when precaution is bilateral on the part of potential injurers and potential victims. In the case of hazardous wastes, efficient precaution is usually unilateral, so strict liability is the socially preferred rule.

This conclusion would be strengthened if Johnson and Ulen were to expand their model to take account of some omitted considerations. To illustrate, they do not take account of litigation costs. Strict liability is simpler to try because the problems of proof are less severe. So, litigation costs are presumably lower under a rule of strict liability than under a negligence rule. Furthermore, Johnson and Ulen assume a static technology. Their model could be expanded to encompass incentives for technical innovation. A rule of strict liability provides a continuing incentive for accident-reducing innovation by potential injurers. In contrast, a negligence rule gives little incentive for accident-reducing innovation by potential injurers because they can escape liability by satisfying the legal standard.

Having demonstrated that strict liability is socially preferable to negligence, Johnson and Ulen go on to consider the problem of proof with a strict liability standard. The essential problem is that the plaintiff must prove that the defendant caused the harm in order to recover damages. The courts cannot always be certain about whether the defendant actually caused the harm alleged by the plaintiff. Johnson and Ulen demonstrate that uncertainty about legal cause can result in incentives for precaution that are either excessive or deficient relative to the socially optimal level of care. For very low probability events, they conclude that private remedies will typically result in too little precaution. This fact provides one justification for government regulation: a regulatory agency could set standards above the level that would otherwise result from private remedies alone.

In passing, Johnson and Ulen point out that there are serious dangers with relaxing the causal standard of proof that plaintiffs must meet to recover damages. To be specific, Johnson and Ulen reject the idea that plaintiffs should be able to recover for exposure to the risk of harm without proving that the risk materialized and actual harm resulted from the defendant’s behavior. To deal with risks, especially remote risks, Johnson and Ulen recommend regulation rather than making private remedies more widely available by lowering standards of proof.

This line of thought naturally leads to Conrad’s paper, which concerns applying cost-benefit techniques to the evaluation of government projects that reduce risks. Such projects might include imposing regulations upon producers of hazardous products. Conrad derives an expression for the amount that the beneficiaries would be willing to pay for a reduction of risk. The amount they would be willing to pay is, of course, a sum of money such that they would be indifferent between paying this sum and enjoying the reduction in risk or keeping the money and being exposed to the risk. Thus, Conrad shows how to use the willingness-to-pay framework in a context of uncertainty to design government policies, including regulations, that reduce risk.

The chief difficulty with applying Conrad’s standard is the difficulty of obtaining reliable measures of willingness to pay for goods for which there are no markets. Making such assessments is difficult for consumers when they have no experience with the goods in question. Conrad argues that “contingent evaluation”—that is, asking consumers questions of

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1 The theorem that the authors prove concerning a mean-preserving spread and their result in equation (5) that the injurer’s private optimum lies to the left of the socially optimal amount of precaution, $x^*$, must be taken on faith because the demonstration of this point is not given. The special conditions on the distribution $q(x)$ under which these results hold should be emphasized.
the type, "What would you be willing to pay if this good were available?"—is the best approach available for many practical choices. Fortunately, he suggests a distinction to make the task a little easier. Conrad's mathematical model distinguishes between two types of benefits from government projects to reduce risk: the direct benefit of the reduction in risk to which the affected parties are exposed and the indirect benefit of the reduction in safety expenditures by the affected parties that is possible because the government project reduces the risk. These two components raise distinct problems of estimation. The latter is computable from the elasticity of the supply of precaution, whereas the former depends crucially upon attitudes toward risk that are difficult to observe.

Concluding Remarks

Hazardous wastes and other environmental risks have provoked a crisis in the system of tort liability and also in the system of government regulation. These three theoretical papers bear upon that crisis. Two of the papers are generally supportive of combining regulatory standards and strict liability in tort for the harm caused by producers of hazardous wastes, and the third paper describes how to evaluate government projects to reduce risk. All the authors recognize that problems of information are central to an adequate theory and to an effective public policy.

I would suggest two aspects of this problem that warrant further consideration. First, the static equilibrium theorems do not capture the crucial role of innovation. It is technical change that has created so many environmental hazards and the reduction in these hazards also depends crucially on technical progress. Incorporating innovation into the formal models would move them closer to reality.

Second, a distinction in law that warrants attention is between prices and sanctions (Cooter). A price is extracted for performing a permitted act and a sanction is extracted for performing a forbidden act. Furthermore, sanctions increase for intentional or repeated violations, but prices do not increase for intentional purchases. And sanctions increase for repeated offenses, whereas prices seldom exhibit quantity surcharges and often exhibit quantity discounts. Some environmentally hazardous activities must be priced, and others must be forbidden. Regulators must decide whether the fine attached to violating a regulation is a price attached to the act or a sanction against wrongdoing. Lawyers have little intuitive understanding of prices, and economists have little intuitive understanding of sanctions, yet these two ideas and these two disciplines must be brought together to create effective policies toward environmental hazards.

Reference