
Readings

of particular interest

Industrial Pollution: Strategies to Minimize Damage

Targeting Economic Incentives for Environmental Protection by Albert L. Nichols (Cambridge: The MIT Press, 1984), 189 pp.

Economists have long argued that environmental regulators should rely less on "command-and-control" standards, such as those that require uniform reductions in emissions at each smokestack, and more on methods that create economic incentives not to pollute, such as emission fees and marketable emission permits. On this view, incentive schemes promote efficiency by allocating emissions reductions among sources in the least costly manner.

The efficiency of environmental regulation, however, depends not only on its choice of instrument (standards vs. incentives) but also on its choice of targets—whether it attempts to reduce emissions as such, or the damage that emissions do. Albert Nichols of Harvard University (now on leave as Director of the Economic Analysis Division in the Environmental Protection Agency's Office of Policy, Planning, and Evaluation) argues in this book that scholars and practitioners should shift their attention from emissions to damages, and reconsider various instruments in the light of their ability to reduce damages (as opposed to emissions) at least cost.

Nichols starts with a review of the relative advantages of different types of incentives. No system allows regulators to know in advance both the overall level of emissions and the marginal cost of control that will result. Auctions of marketable permits hold the former to a known level and allow the latter to vary; emissions fees do the reverse. Both schemes increase efficiency in at least two ways, aside from allocating pollution reductions to the sites with the lowest marginal costs. First, they alter the prices of final goods to reflect the external costs

associated with their production. Second, they generate revenues that can be used to displace conventional tax levies (with their distortive effects).

If there is uncertainty about how much damage emissions cause, it will be difficult to choose the correct level for a fee. But it will be equally difficult, under such uncertainty, to select the correct emissions standard or number of permits. Whether marketable permits or fees are more efficient depends on the rates at which marginal costs and damages change with emission levels. If damages increase more than proportionally to emissions, marketable permits may be superior. Nichols argues that for many pollutants damages appear to be roughly linear over the relevant range, while marginal costs typically rise rapidly as control levels increase. This implies that fees will tend to be more efficient means of controlling such pollutants because they are more sensitive to marginal costs of control.

On the targeting problem, Nichols notes that damages usually result from a multistage process in which there are numerous potential targets for regulation, ranging from inputs (such as the sulfur content of coal) to the end points of concern (such as the number of cases of cancer). If incentives are used, efficiency argues for selecting a target as close as possible to the end point. A later target, such as health effects, offers two advantages over an earlier target, such as emissions. First, it provides an incentive for firms to exercise all the damage-reducing options within their power. Second, it ensures that the marginal cost of reducing damages, not just emissions, will be equalized across sources. If nonmarket standards are used, however, the optimal target is less clear. A rigid ceiling on the damage each firm may do, while allocating control efforts efficiently within firms, may lead to even more inefficient allocations across firms than a ceiling on emissions or inputs.

As an example of the choice between targeting emissions and exposure in regulating health-threatening pollutants, Nichols explores the case of benzene emissions from maleic anhydride plants, which were the subject of an EPA standard proposed in 1980 and withdrawn earlier this year. Like other regulatory agencies, EPA generally assumes that the public-health risk posed by cancer-causing chemicals such as benzene is proportional to total population exposure. Primarily because of differences in population density, however, the total human exposure per unit of benzene emitted varies by a factor of fifty from one maleic anhydride plant to another. The marginal costs of control also vary, though not by as great an amount.

The author first analyzes the general problem with the aid of a mathematical model. Using specific functional forms for the costs of control and for the distributions of costs and marginal damages, he compares the efficiencies of several combinations of targets and instruments. In all cases, the charge levied on exposure, which is sensitive to differences among plants in both marginal costs and damages, is the most efficient approach, often by a large margin. The rankings of the other alternatives depend on several factors, including the curvature of the cost function, the relative variances in marginal damages and costs, and the correlation between costs and damages. In many cases, standards that are sensitive to variations in exposure (that is, are tighter for high-exposure plants) are more efficient than a uniform emission charge that ignores population exposure, even though the latter, unlike the former, is responsive to cost differences.

Nichols then turns to the specifics of showing how an exposure charge could be set and implemented for benzene. Although he is skeptical that any regulation in this case would produce more benefits than costs, he offers evidence that an exposure charge would be substantially more efficient than the uniform standard that EPA proposed. Smaller, though still significant, efficiency gains also could be achieved by applying standards only to high-exposure plants or by imposing a uniform emissions charge instead of a uniform standard. These strategies are less efficient than exposure charges, however, when cost estimates are inaccurate or when conditions are changeable,

Nichols says. The maleic anhydride case illustrates the problem of uncertainty, he adds; conditions changed after EPA proposed its standard.

The fifty-fold variation in the exposure to benzene emissions from maleic anhydride plants is far from unique: analyses of other pollutants show even larger differences in exposure from plant to plant. These differences in marginal damages, Nichols argues, imply that there could be major efficiency gains in developing better targets than emissions, whether the instruments employed are the incentives favored by most economists or the standards that continue to dominate U.S. environmental regulation.

Trouble in the Regulated Nursery

“Unintended Consequences: Regulating the Quality of Subsidized Day Care” by Susan Rose-Ackerman, in *Journal of Policy Analysis and Management*, vol. 3, no. 1 (Fall 1983), pp. 14-30.

In the period between 1958 and 1977 the proportion of preschool children of working mothers cared for by persons outside the family rose from 31 percent to 48 percent. While this percentage includes “informal” suppliers—babysitters who come to the home or women who look after a few children in their homes—the number of formal day care centers also rose from 4,400 in 1960 to 18,300 in 1977. By 1979, 800 million dollars of state and federal money were being spent on day care. About 78 percent of this total went to organized centers, which cared for 61 percent of the children receiving subsidies.

For some years the federal government maintained a set of regulations intended to ensure the quality of day-care centers that received federally subsidized children. However, according to Susan Rose-Ackerman, professor of law and political economy at Columbia, the regulations could have had detrimental side effects. “The federal government’s retreat from regulation in 1980 and 1981 may have had results that—even if unintended—were in many ways salutary.”

The Federal Interagency Day Care Requirements (FIDCR) were developed by a

group of federal agencies in 1968 and incorporated by Congress in modified form into law in 1975. The rules set requirements for such matters as child-to-staff ratios, group sizes, safety, and cleanliness. "The FIDCR also established requirements for food service, medical examinations, social service provision to families, parent conferences, and parent advisory councils."

Not surprisingly, these rules, if strictly enforced, would have driven costs up, and day-care providers expressed widespread discontent. The child-to-staff ratios, in particular, were generally much more stringent than the equivalent state licensing regulations had been. Thus, in response to the complaints of providers, Congress suspended the child-to-staff ratios pending a study of the feasibility of the FIDCR. The other provisions were meant to be enforced. In 1980 the federal administrators softened some of the requirements and eventually, as part of the block grants program, they were suspended entirely. The law now requires only that federally subsidized centers comply with all state and local regulations.

Federal regulation of subsidized day-care centers has several disadvantages, the author says. First, and most obviously, "a program with a fixed budget will benefit fewer children as regulations are made more stringent." Second, reimbursement rates may not be high enough to compensate centers for the added cost of the federal requirements—leading some centers to turn down subsidized children. Alternatively, centers that take subsidized children may face incentives to take more and more of them, since as the regulations push up their cost per child, unsubsidized families tend to pull out. The director of one charitable nursery reported to the authors of one study: "The welfare department will pay \$40 a week for every child which they send, but I have to prove I'm spending \$40 on all my other children. The board can't see how we manage unless we take only welfare children. This will solve our financial problems, but we don't want to offer a segregated program." In fact, 40 percent of the nonprofit centers that accepted subsidized children had their entire budget paid by public subsidy. While federal regulations are obviously not the only reason stratification occurred, they did, the author argues, make "increased segregation likely."

All of these concerns suggest, the author says, that—pending the evaluation of vouchers and other innovative strategies—"unsubsidized and subsidized clients ought to face equivalent regulations." Given "the federal government's limited resources and the desirability of encouraging the integration of children by income level, the policy of following state law appears to be a sensible second-best accommodation."

Adding Balance to Additive Regulation

"Food Safety: Revising the Statute" by David A. Kessler, in *Science*, vol. 223, no. 4640 (March 9, 1984), pp. 1034-1040.

When Congress last amended the Food, Drug, and Cosmetic Act nearly twenty-five years ago, most experts believed that it was possible to remove all carcinogens from the food supply. Today, the Food and Drug Administration (FDA) and many other observers see this goal as unrealistic. In the first place, the technology of analysis has advanced greatly, so that scientists now can identify smaller and smaller traces of carcinogenic substances. In addition, according to David A. Kessler, "contemporary toxicological testing suggests that an array of nutrients may play some role in the carcinogenic process." This change in perspective has created a need to reform the existing statute, says Kessler, who is a consultant to the U.S. Senate Committee on Labor and Human Resources and serves as special assistant to the president at Montefiore Medical Center in New York City.

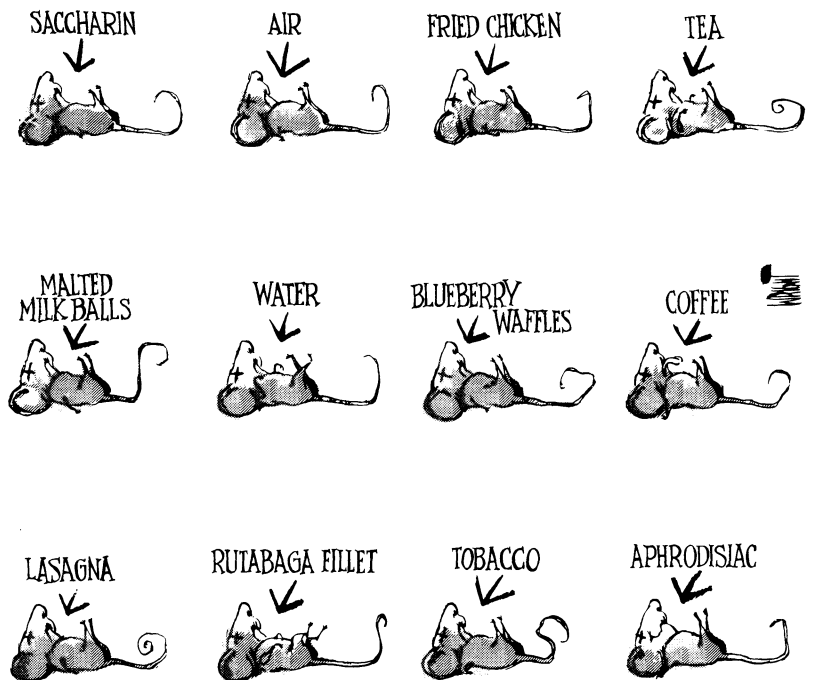
The author says the FDA has had to interpret the statute in novel ways to avoid conclusions that a rigid reading might yield. An example is the agency's handling of selenium, an element that is essential for normal growth and metabolism but that also has been discovered to cause tumors in test animals. Normally the Delaney clause, which prohibits the use of any substance that induces cancer in animals or humans, would force a ban on selenium. To avoid this prospect, the FDA adopted a "novel and unproved theory" to justify its failure to apply the clause in this case. Kessler warns that

the statute may be forcing the agency to sacrifice the predictability and consistency of the law to obtain desired outcomes.

Current law prevents the FDA from balancing risks sensibly in other ways as well. It may not, for instance, consider the possible health benefits of a food additive, such as the possible benefits of saccharin for diabetics and dieters or of nitrites in preventing botulism. If a useful substance is forced off the market and replaced by a less-studied substitute, health risks could increase. Moreover, the author says, if the agency is forced to pursue trivial risks, it may be distracted from serious risks: "the nation's capacity for toxicological testing is limited to a few hundred compounds a year."

The complexity of the law, however, makes any revision difficult. The Food, Drug, and Cosmetic Act defines nine major categories of substances, which are not mutually exclusive. It applies a different regulatory approach to each category. The distinction between naturally occurring injurious substances and those that are "added"—which are held to a stricter standard of safety—dates back to the first federal food law, the Pure Food and Drug Act of 1906. The National Academy of Sciences' Food Safety Panel has recommended that a single standard of risk should be applied to all the different categories.

The author cautions that even though "the temptation is to view this system as an irrational patchwork," the "temptation should be resisted; although this law is insufferably complex, most of the distinctions it makes are fundamentally sound." The distinctions between substances based on how they enter the food supply (such as additives vs. natural constituents vs. environmental residues) reflect in part the limitations on the FDA's ability to control exposure. Other categories reflect "a judgment concerning the practicality of imposing a pre-market approval process, the amount of data likely to be available, the likelihood of a proponent for the substance who could assume the burden of toxicological testing," and so on.



Reprinted by permission, Tribune Media Services, Inc.

A number of possible revisions of the Delaney clause have been proposed short of full repeal. One would turn the clause into a rebuttable presumption against use of an additive found to cause tumors in animals. Another would allow leeway for additives that are "essential constituents" with a "long history of use" in the production of specific foods. A third would exclude some categories of regulated substances from the scope of the clause, such as, for example, packaging materials or substances with benefits. Any such excluded categories would be regulated under the general safety provisions of the act.

If the agency fully incorporates benefits into its risk assessment, however, the regulatory process could drag on for much longer than under the present system, the writer says. Benefits assessment might thrust value judgments on the FDA that Kessler believes are better left to Congress, such as whether health benefits only should be considered, or whether regulators should also take into account the effects of their restrictions on the price, abundance, variety, and consumer appeal of the food supply.

Do Corporate Takeovers Keep Managements Lean?

"An Analysis of the Effect of State Acquisition Laws on Managerial Efficiency; The Case of the Bank Holding Company Acquisitions" by Christopher James, in *Journal of Law and Economics*, vol. 27 (April 1984), pp. 211-226.

Do corporate managers behave in the best interests of their stockholders? The answer may depend on how efficient the mechanisms are by which the stockholders can replace the managers. Recent writers have theorized that there is, in effect, a market for corporate control in which management teams compete for the right to manage corporate enterprises. In a well-functioning market for corporate control, if an incumbent management team behaves inefficiently, a competing set of managers will find some way to take its place. The more competitive this market for management is, the more it protects the interests of stockholders.

Corporate takeovers are one of the key ways stockholders change managements. It is not obvious, however, that their function is irreplaceable. After all, other ways of enforcing managerial efficiency are available too. The possibility of a proxy fight for control is one such spur; internal competition with other executives in the same firm is another. These alternative control mechanisms might be highly effective by themselves in protecting shareholder interests, and might conceivably involve lower transaction costs than the takeover process. That would make the takeover mechanism redundant as a spur to efficiency—undercutting an important argument for allowing wide leeway in corporate takeovers.

In this paper, Christopher James of the University of Oregon empirically examines the role of takeovers as a separate and distinct disciplinary device for managers. He compares the performance of banks operating in two sets of states. One set consists of states whose statutes prohibit the acquisition of a commercial bank by any other corporation ("nonacquisition states"). The other set consists of states that have no statutory impediments to bank acquisitions ("acquisition states").

The study examines expenditures by management on salary and on office and occupancy expenses for banks operating in each of the two

sets of states. These expense items were analyzed because they are commonly thought to be associated with managers' consumption of material perquisites, or "perks." If the threat of takeover is an important disciplinary device for managers, then bank managers should be less subject to shareholder control, and should consume more perks, in states where no such threat exists because the law prohibits corporate acquisitions of banks. If, on the other hand, the other control devices available to shareholders are perfect substitutes for corporate acquisitions, then there should be no difference in the consumption of perquisites between the two sets of states.

An analysis of 580 banks in the two sets of states revealed significant differences in performance consistent with the hypothesis that takeovers provide an important safeguard for stockholder interests. Banks in nonacquisition states had significantly higher levels of expenses than did banks in acquisition states. "The evidence therefore suggests," James concludes, "an important and separate role for corporate takeovers as a disciplining device for managers." The evidence also suggests, he adds, that removal of state and federal restriction on acquisitions in banking could result in substantial efficiency gains by promoting a more active acquisition market.

Urban Renovation and the "Displaced" Tenant

Revitalizing America's Cities: Neighborhood Reinvestment and Displacement by Michael H. Schill and Richard P. Nathan (State University of New York Press, 1983), 184 pp.

For large old American cities confronting serious economic and social problems, the most hopeful development of the last two decades has been the revival of many close-in urban neighborhoods. Declining residential and commercial buildings have been rehabilitated; cities are succeeding in retaining some of their higher-income residents, instead of losing them to the suburbs, and to a minor extent have even been able to attract suburbanites back to the city. The upgrading of these neighborhoods has strengthened the economies of the cities and

has also helped to alleviate the fiscal difficulties of their governments.

In Washington, however, the major political response to this unexpected urban revival has been to deplore its undesirable side effects. Public policy has focused on preventing or alleviating the displacement of the original residents of the neighborhoods, even to the point of impeding the revitalization process itself. In 1978 Congress stated that displacement should be minimized, not only in federal housing and community development programs but also in neighborhoods where revitalization is privately financed. The next year, the U.S. Department of Housing and Urban Development issued regulations that required cities as part of their local community development programs to develop strategies to help those who were displaced to find acceptable housing. After protests from the cities, the regulations were withdrawn by the Reagan administration in 1981. The image of a generalized social problem persists, however. At the local level, many city governments have passed laws that regulate property ownership and transfer in an effort to slow "gentrification." Washington, D.C., Philadelphia, and New York all restrict condominium conversions; Washington has a special tax designed to discourage "speculation."

At the same time, a few analysts have begun to investigate the actual nature and extent of displacement. Michael Schill, formerly of the Princeton Urban and Regional Research Center, and Richard Nathan, director of the center, conducted the largest survey yet undertaken of people who have in fact been displaced. They identified nine neighborhoods in five cities that were going through the early stages of revitalization, and were able to locate and interview over 500 renters who had moved out of these neighborhoods in 1979 or 1980. All nine neighborhoods were low-income before revitalization began, but they were otherwise quite diverse; four were predominantly white (one Hispanic), three predominantly black, and two mixed; some blue-collar, others with high concentrations of elderly residents or families on welfare.

Schill and Nathan found that displacement in these neighborhoods was not extensive. About 23 percent of those who moved did so involuntarily. The most common reason for moving voluntarily was a change in housing

preferences or household composition (marriage, divorce, a new baby, and so forth). They conclude that "the popular image of the displaced outmover is grossly inaccurate. That image is of the outmover as either elderly or part of a nonwhite household (or both), afflicted with ills that range from having to pay unaffordable rents for substandard units to suffering from severe depression." In contrast, Schill and Nathan found that displaced households were usually better housed, in better neighborhoods, after they moved. They were typically poorer than other movers, and were disproportionately composed of Hispanics, the unemployed, single people, and women with small children, but not the black or the elderly. Most of these findings are consistent with the small body of earlier research that has been done on displacement.

Based on the survey, the authors argue that "the revitalization of inner-city neighborhoods should be welcomed rather than discouraged." They do not dismiss the problem of displacement, however; they note that displaced persons paid higher rents after moving, and that a small fraction were worse off, subjectively and objectively. To alleviate such problems they recommend "positive measures to reduce barriers to mobility"—specifically, various subsidy programs to enable low-income households to continue living in reviving neighborhoods, to help them relocate, and to provide more low-income housing.

Mark Your Calendar Now

Eighth Annual						
December						1984
S	M	T	W	T	F	S
						1
2					7	8
9	10			13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Public Policy Week						

AEI's Eighth Annual Public Policy Week will be held December 3-6, 1984, at the Mayflower Hotel, Washington, D.C.

Watch coming issues of *Regulation* for program details. For further information, call 202/862-5833.

Conference sessions will be devoted to economic outlook, international affairs, trade policy, public opinion, elections, community development, health, energy, regulation, religion, education, and the media.