Incentives for Environmental Protection edited by Thomas C. Shelling

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BOOK REVIEW


Reviewed by Craig E. Reese*

This book is the fifth in the MIT Press series on the regulation of economic activity, the general editor of which is Richard Schmalensee of the MIT Sloan School of Management. Previous books in the series have dealt with the regulation of freight transport, the SEC, oil price controls, and case studies on public regulation by social scientists sympathetic with the philosophy of the “Chicago School of Economics.” As Schmalensee explains in the preface, the purpose of this MIT series “is to inform the ongoing debate on regulatory policy by making significant and relevant research available to both scholars and decision makers.” More specifically, three extensive case studies are used in this book as a vehicle for exploring the degree to which economic disincentives, such as emission or effluent charges, can be used as an alternative to regulation in the implementation of environmental protection policy.

Political economists have traditionally argued that public policy-makers can control social behavior through three approaches: regulation (including prohibition), subsidization, and taxation (tax or fee on pollution). None of the three is theoretically

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1 Emission or effluent charges are fees or taxes exacted by the government from natural (individuals) and legal (institutions) persons who pollute the air, water and land. Such exactions are a surrogate for the price society would charge for the use of clean air, clean water and unspoiled land.
more efficient than the other two. However, federal legislation to control pollution is classified by political economists as regulation. Examples of legislative regulation include the federal Clean Air Act and the various federal water pollution control acts. Much of the remaining federal pollution control legislation is classified as subsidization. Federal grants for the construction of municipal sewage treatment facilities, the rapid amortization of pollution control facilities, the investment tax credit, and industrial development bonds fall within the subsidization category. Finally, there has been little, if any, reliance on taxation as a means of pollution control in the United States. Some examples are found at the state level, including beverage container (litter) taxes in Oregon, Vermont, Maine, and Michigan; at the federal level, there is the Superfund exaction on chemicals and petroleum.

The federal government relies primarily on the regulatory process with limited subsidization as the means for controlling pollution. Nonetheless, some political economists continue to propose the use of other means of social control, notably, taxation, as complements or alternatives to the regulatory process. The proponents of alternatives to regulation often argue for taxation because effluent or emission charges are alleged to be more efficient than regulation in practice. Based on economic theory, the superiority of the taxation method of social control can be demonstrated only where suboptimal implementation is assumed. Suboptimal implementation occurs when the total private cost of reducing pollution exceeds society's economic benefits. This cost-benefit approach is illustrated when, for example, government imposes uniform regulatory standards that do not reflect each entity's marginal cost of pollution control. Unfortunately, few empirical studies have been conducted demonstrating the superiority in practice of any one of the three methods of social control. Undoubtedly, this fact explains the paucity of references to empirical research in the three in-depth case studies presented in Schelling's book.

In the last few years, the public's apparent dissatisfaction with high taxes has precipitated a tax revolt in California (Proposition 13) and in other states and cities. The public's antitax mood has not been reflected, however, in its attitude toward the use of taxation to control pollution. In early 1978, a national survey of

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See W. Baumol and W. Oates, Theory of Environmental Policy (1975) for an excellent commentary on the efficiency of the three social control methods.
attitudes toward using taxes to encourage more “socially responsible” behavior suggested popular support. Of those surveyed who were eighteen years or older, eighty-two percent favored a federal tax system wherein companies that do not comply with some preconceived effluent of emission standards should pay higher taxes than those firms that do comply with such standards for water and air quality.3

The book’s first chapter, which is entitled “Prices as Regulatory Instruments” and written by the editor Thomas C. Schelling, is an explanation of the economic theory of pollution charges (taxation) and pollution permits that fix the overall amount of allowable emissions (marketable rights approach). The three case studies which follow deal with the regulation of aircraft noise, the regulation of airborne benzene, and the regulation of air pollution under the Clean Air Act.4 The final chapter, which is entitled “Economic Incentives and Environmental Policy: Politics, Ideology and Philosophy,” is an analysis of the political economy of incentive-based approaches. This analysis relies heavily on a 1978 survey conducted by the author Steven Kelman on the attitudes of selected congressional staff members and Washington lobbyists (for environmental groups and trade associations) toward the use of economic incentives for controlling pollution.

The first case study, written by David Harrison, Jr., begins with a chapter on the problem of aircraft noise pollution. The next two chapters describe the federal government’s approach to the control of aircraft noise (Chapter 3) and noise control strategies for specific airports (Chapter 4), especially those proposed for Boston’s Logan Airport. Both chapters include extensive cost-benefit analyses.

The final chapter of the noise pollution case study is an evaluation of incentive-based strategies for controlling aircraft noise pollution. In his evaluation, Harrison explains several conclusions derived from his analysis of the previous three chapters of the case study. His explanation stresses the utility of economic-incentive schemes in general, while recognizing that the theoretical (cost-benefit) analysis of such schemes should include disclosure of administrative obstacles thereto, as well as philosophical and ethical considerations implicit in using economic incentives to control pollution.

The second case study, which begins with an overview (Chapter 6) of the problem of benzene air pollution, actually serves as an illustration of the general problem of regulating hazardous air pollutants. The Clean Air Act's provisions applicable to such public-health air pollution hazards have been controversial and the subject of much litigation because of the stringent and costly regulations applicable to any substance classified by the Environmental Protection Agency (EPA) as a hazardous air pollutant. In the overview, the author Albert L. Nichols proposes that one or more of the following three economic incentives be implemented as a complement to what is now exclusively a regulatory-based scheme for controlling hazardous air pollutants: pollution charges (taxation), marketable rights to pollute (pollution permits), and subsidies.

In the second chapter (Chapter 7) of his benzene case study, Nichols describes several models used to estimate damage functions for various ambient levels of benzene air pollution and analyzes the implications of various cost-based incentive schemes. For the most part, he overlooks the uncertainties associated with any one model for estimating damages from human exposure to benzene. The third chapter (Chapter 9) is a thorough study of the maleic anhydride industry, including a cost-benefit analysis of the EPA's proposed benzene regulations and an analysis of alternative economic-based incentives on the benzene emissions by that industry. In the final chapter of the benzene case study, Nichols argues for the use of exposure charges rather than regulations in reducing benzene emissions and the level of ambient benzene concentrations. He relies heavily on his study (Chapter 9) of the use of a charge scheme for benzene emissions to demonstrate that a charge scheme is more cost-effective than regulations.

The third and final case study, which was written by Robert Repetto, begins with an overview (Chapter 10) of the prevention-of-significant-deterioration (PSD) air pollution control regulations and the economic efficiency implications thereof. The second chapter (Chapter 11) in the Clean Air Act case study is a summary of the criticisms of and alternatives to the PSD regulations. The third chapter (Chapter 12) is an evaluation of the performance of the alternatives to PSD regulations, including economic-based incentives such as the offset system, bubble concept and emis-

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5 The "offset system" is an EPA policy designed to permit an industrial plant to locate in an area which does not meet federal air quality standards if that plant's owners can
sion charge schemes. In the final chapter of the case study, Repetto places the PSD regulations in the context of the broader goals of economic efficiency and concludes that PSD policies should be varied from region to region to reflect the unique air-quality values being protected therein and the probable attributes of future emissions growth in each region.

The final chapter of the book is perhaps the most interesting to political economists. It analyzes the reasons for the unpopularity of economic-incentive approaches among congressional staff members associated with environmental committees, environmentalists, and industry lobbyists. The attitudes of these environmental policy-makers, at a time when deregulation and market solutions to public policy problems have grown so popular, cannot be explained by a lack of literature on the theoretical advantages of economic-based incentives for pollution control. One need only look at the extensive ten page bibliography at the end of Schelling's book which indicates a wealth of economic literature on the use of economic incentives to control pollution.

As noted, opinion polls also indicate that the public supports taxation as a means of pollution control. While the results of Kelman's survey indicate widespread awareness of the alternative of economic incentives for pollution abatement among congressional staff-members and environmentalists, these policymakers are nonetheless ideologically and philosophically opposed to economic-based incentives because 1) pollution charges and marketable rights represent a "license to pollute" and 2) a monetary price cannot be placed on health or the environment. Ironically, industry lobbyists as a group were woefully uninformed about incentive-based approaches for controlling pollution. In addition, they expressed a concern that pollution control costs were already too high and that economic-based incentives would only increase costs by creating a new source of revenue for the government. Kelman closes with his suggestions for a political strategy that could result in the realization of specific statutory au-

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6 The "bubble concept" is an EPA policy which permits an industrial complex emitting the same air pollutant from several sources therein to be treated as a single source of that pollutant, i.e., the entire complex is treated as a "bubble" of air pollution. As a result, the industrial polluter may abate its overall emission of that pollutant in a cost-effective manner by utilizing the least-cost abatement technologies so that an overall standard (rather than a standard for each source) for the polluting substance is satisfied.
authority for pollution charges and other economic-based incentives for pollution abatement when Congress reenacts pollution control laws. Because both the Clean Air Act\(^7\) and the Water Pollution Control Act\(^8\) are expected to be reenacted in 1985, knowing why those who influence federal environmental policy are reticent to support economic incentives should be helpful to congressional supporters of deregulation and economic-based solutions to public policy problems.

No doubt Schelling's book would be a valuable addition to the library of economists and political scientists with an interest in environmental affairs. Schelling's book would also be excellent for a graduate course in environmental economics or a graduate course on public policy and environmental protection. In addition, environmentalists in the teaching profession, government and industry should recognize the book as an excellent collection of theory and applications. Finally, the subjects of Kelman's survey, including congressional staffers associated with environmental committees, environmental group lobbyists, industrial lobbyists, and similar groups at the state level of government, might also benefit by adding this book to their shelves. Although reading the book may not change their minds, it is always helpful to understand how the opposition thinks.

\(^7\) Supra note 4.