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ENVIRONMENTAL IMPROVEMENT THROUGH ECONOMIC INCENTIVES

by

FREDERICK R. ANDERSON, ALLEN V. KNEESE, PHILIP D. REED,
SERGE TAYLOR and RUSSELL B. STEVENSON

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Anderson, et. al. give a careful exposition of the case for using economic incentives for environmental improvement. The authors recognize that the conditions for using pure economic charges, i.e. all polluters can be identified, the effluent constantly measured and the resulting damages quantified and monetized, do not exist outside of the conceptual world of economics textbooks. A clear and convincing rationale for supplementing the existing regulatory apparatus with charges is provided in Chapter 2. "A host of technical, legal, behavioral, and political problems and issues arise in making operational the policies this rationale suggests."¹ This is a critical conclusion and the authors set about addressing these issues in the following chapters.

As an introduction, the authors survey existing applications of charges both in the U.S. and abroad. The chapter is not detailed but it is comprehensive. Seven basic issues ranging from goals of the charges system to use of the revenues are addressed for each existing application. Proposed charge systems are also surveyed. I would have liked to see a quantitative indication of the relative success of existing systems, but the data is very limited for such a survey.

Since the book was printed, two regional air pollution control agencies, the South Coast Air Quality Management District (SCAQMD) and Monterey Air Quality Management District, have adopted "emission fee" systems for large stationary sources of air pollution. The purpose of both of these systems is to raise revenue, but at least in the SCAQMD the fees vary with the "damage" caused by the various pollutants. The fees are probably too low to have an incentive effect, but they may provide an important precedent for future charge systems. The California State Legislature is considering a bill which would allow all of the pollution control districts to assess such fees.² Future developments in California may be important in the course of charge systems nationwide. Proposition 13, recently passed by the people of California, limits property taxes. This may provide a further stimulus to adopting charges for polluters.

1. P. 38.

2. Assembly Bill 3251.

Chapter 4 deals with the thorny problem of monitoring emissions. This is often a criticism of charges. The problem is twofold: choosing "the parameter on which charge is to be levied" and "devising an acceptably accurate and reliable means of measuring the parameter over time."³ It is only in the case of air and water pollution where monitoring is particularly difficult. Technology is developing in the monitoring instrument field, and the authors even give rough estimates of costs for some types of instruments.

The authors point out that the lack of technology does not destroy the logic of charges, since several alternatives to continuous monitoring are available. These include: sampling, materials balance and estimation. Obviously, the design of charge systems will depend to a great extent on the level of monitoring technology in the affected industries. Estimation should be suitable for almost all industries. The responsibility for proving such estimates are in error should fall on the polluters. This approach would take away much of the measurement onus, and it is widely used in the existing regulatory process.

The legal questions pertaining to implementing an emission charge system are dealt with thoroughly and well in Chapter 5. State and federal law may differ, but the important conclusion is "that Congress and the state legislatures have the constitutional power to enact charges plans." Legislation will be required, but the legal power does exist. Any serious proponent of charges should carefully study Chapter 5.

The politics of charges are dealt with historically and analytically in Chapter 6. This final chapter is filled with the insights of astute political observers. Many interesting questions are dealt with including the likely composition of industry opposition, the problem of small firms and regional variations in charge rate. Who sets a charge and the method used to set it are both important political questions discussed with considerable insight.

The setting of charges is difficult in the absence of meaningful estimates of the social damages of specific pollutants, and a way of relating ambient levels back to emissions. Recent (unpublished) studies within state pollution agencies make me skeptical about diffusion models, and uneasy about using high published estimates of property and health damages from pollution. Abatement cost approaches are much more likely to provide a publicly or politically acceptable basis for a charge system.

The last several pages of the book are packed with important ideas

3. P. 91.

which can be best summarized by two sentences from the conclusion to Chapter 6: "The . . . potential disadvantages of charges seem to boil down to a restatement of the need for a charge plan to be well designed, to be designed to be politically feasible in the particular context involved" . . . "But if a new policy had to wait until there was no opposition, nothing would ever be changed."

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