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Studies in International Environmental Economics

Ralph C. d'Arge

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Ingo Walter, Editor
New York: John Wiley, 1976, pp. 364.

This book contains a compendium of twelve papers and discussants' extensive evaluations presented at a Symposium on the International Economic Dimensions of Environmental Management organized by Ingo Walter and held at New York University in April, 1975. The Symposium was sponsored by the Ford Foundation and New York University. Since this reviewer was a participant, the review which follows will attempt to exclude examination of issues in which he was directly involved.

The twelve papers represent a reasonable cross section of current research into problems of international environmental management. As Baumol notes in the introductory essay, these problems tend naturally to coagulate around two cells. The first involves national environmental policies that through trade effects have international repercussions. The second is simply non-market environmental transactions among countries which share a regional or global "commons." Clearly, the first issue immerses environmental issues into the mosaic of traditional international trade questions on non-tariff trade barriers and tariffs, balance of trade, and other traditional comparative advantage disagreements among nations. The second appears to evoke an entirely different panorama of issues of rights and responsibilities and recognized interdependencies among nations due to lack of well defined ownership rights to these "commons" and ability to enforce them. As Baumol succinctly states the problem, the "essential distinguishing feature . . . lies in the difficulty in achieving any sort of effective international agreement and in seeing that it is carried out faithfully by all parties to the agreement." This bifurcation of issues is generally represented in the volume with a grouping of papers into three parts: (1) Trade Competitiveness; (2) National and International Policies and Cooperation; and (3) the Transnational Pollution Problem. In Part I Professor Grubel leads off with an intensive examination of domestic environmental controls within the context of the Hecksher-Ohlin model of comparative advantage. His major finding for a "small" country (no effect on terms of trade) is that it pays the country to eliminate the internal pollution distortions "directly, leaving international trade unrestricted, rather than introducing a new distortion of economic efficiency through restriction on trade." The "large" country case is less clear in terms of welfare outcomes, but Grubel's analysis tends to support the conclusions of earlier writers on comparative advantage: that countries with a comparative advantage in environmental assimilative capacity will tend toward exporting pollution intensive commodities.[1] Recently, Pethig has shown this rather general conclusion must be qualified.[2]

Horst Siebert, in the next essay, develops an interesting partial equilibrium model of interdependence between trade and environmental systems. Siebert's major conclusion is that the comparative price advantage of a country is reduced when environmental controls are introduced if its export sector has a relatively higher pollution intensity; if it has a less productive abatement technology; if the sector itself is relatively less productive; or if domestic demand cannot shift toward the pollution extensive commodity. Sieberg also examines effluent charge equilization, "the pollute thy neighbor thesis," possible distribution of gains from trade, and superficially, information requirements for establishing effective trade-environmental policies. Next J. D. Davidson and John Mutti develop a very complete empirical import-export demand model for the United States. They examine three methods of financing domestic controls: polluter pays, value-added tax, and a production tax; and they find that there are striking differences in percentage reductions in output and increases in domestic prices among individual industries but very little difference at the aggregate level. The discussions of the papers noted above range from a broad policy analysis by Michel Potier of OECD, Jan Tumlir of GATT, and Edward Shykind of U.S. Commerce, to extensions of the Grubel and Siebert models by R. Pethig and J. Dreyer.

Part II on policy dimensions contains four papers examining: domestic control strategies and the OECD "polluter pays principle" by Jean Phillipe Barde; commercial policy effects by H. Peter Gray; multinational corporate strategy by Thomas N. Gladwin and John G. Welles; and international income distribution consequences by Jaleel Ahmad. Barde concludes that "provided environmental policies in different countries are based on a common-cost allocation principle, no significant trade distortion should arise." By common-cost allocation principle, Barde is referring to the adoption by nations of the OECD polluter pays principle which provides for the polluter to pay control costs but *not* to pay for damages arising after controls are instituted. Barde states rightly that such a principle "is not a total

1. d'Arge & Kneese, *Enivronmental Quality and International Trade*, in INTERNATIONAL ORGANIZATION (1972).

2. Pethig, *Pollution, Welfare, and Environmental Policy in the Theory of Comparative Advantage*, J. ENVT'L ECON. & MANAGEMENT (1976).

internalization principle," but he then goes on to suggest that it " is primarily an efficiency principle, but not per se an equity principle." The OECD principle in the short run is only efficient because the optimum level of control is selected by an autonomous agency, and it has been demonstrated by many authors that in the long run it will yield incorrect incentives in private economies. Alternatively, the OECD principle defines very precisely who pays and how much. Thus, I would suggest that the OECD principle is primarily an equity rather than an efficiency principle. Gray, in the next essay, in fact suggests that "OECD has adopted the polluter pays principle very largely on the basis of its trade neutrality." Barde's paper also contains a very interesting, although intuitive, description of the problems and issues (exceptions, adjustment periods) for OECD countries attempting practically to implement the OECD "polluter pays principle." Gray examines rather unevenly the relationship between improving domestic environmental controls and non-tariff trade barriers and suggests that the use of commercial policies to offset the effects of environmental controls may be necessary but must be temporary so as not to "achieve a counter productive permanency." Gladwin and Welles provide an in-depth survey on multinational corporation strategies. They conclude for multinationals: (1) that environmental behavior primarily will have to be regulated by individual states; (2) that they are dominant "developers of technology needed for solving industrial environmental problems;" and (3) that threats of locational shifts should not be taken seriously except for industrial processes where pollution control costs are high. Ahmad, in the concluding essay in Part II, suggests, with little documented evidence, that the "main . . . impact on developing countries of environmental controls in the developed countries will arise not through trade, but through capital movements." He also suggests that it is difficult to find supportive evidence for the conclusion by some experts in developing countries that environmental policies will widen the disparity between rich and poor nations.

Part II ends with policy statements by Judith Marquand, who concludes that the "OECD countries as a group are not committed to and common approach," by Howard S. MacAyeal, who concludes that multinationals will be able to respond adequately to domestic environmental problems, and by Jeremy Warford, who suggests that "if one looks at the overall efficiency of the economy," since controls such as effluent charges may increase efficiency, "they will tend to keep production costs (possibly including costs of exportables) lower than they would otherwise be."

Part III contains four essays on the transnational dimension. The first essay by d'Arge reviews economic efficiency characteristics of a selected set of policies for resolving transfrontier pollution problems and also summarizes a case study of the stratosphere. In the second essay, Charles Pearson examines types of oceanic pollution and the establishment of abatement goals. He suggests that "the issue of choosing optimum abatement levels is serious because restrictive international law is weak, the mechanisms for international transfers are primitive, and there is no effective resort to compulsion," and finally "mechanisms for compensatory transfers are insufficient for *a priori* confidence in internationally negotiated abatement levels." Pearson also reviews the efficiency characteristics of the Ocean Dumping Convention. In perhaps the most interesting essay in the book, Anthony Scott tersely examines alternative institutional approaches for resolving transfrontier pollution issues. The five options assessed were: diplomatic channels, trade in public goods or bads, common agency and international property rights, and internationalization of domestic procedures. Scott discards as unworkable or inefficient all but the common agency and international property rights options. Scott particularly favors the development of a common agency to resolve transfrontier pollution problems that will provide "the information for an initial treaty or agreement" and perhaps will issue and regulate a market for pollution-certificates. David Pierce, in the final essay, examines international variation in materials recycling. Empirical calcuations are made for aluminum, copper and lead. Pierce finds that there are substantial differences in recycling rates among countries and that perhaps some countries are recycling too little lead. John A. Butlin, Larry Ruff, Robert E. Stein, Stanley Johnson, and Samprit Chatterjee provide insightful critiques of the essays in Part III.

My two major criticisms of the book are its lack of identification of important issues and points of confrontation or agreement between authors and discussants, and the rather arbitrary division of chapters. For example, some papers in Part II could have easily been included in Part I and vice versa. The book represents the first well integrated and extensive examination of the state of economists' thinking on international environmental problems. If it is relatively uneven in quality, this can be attributed to a lack of economic research and the problems of a new field of interest and not to the Editor's attempt to bring it all together.

RALPH C. D'ARGE*

*John F. Bugas Professor of Economics, University of Wyoming.