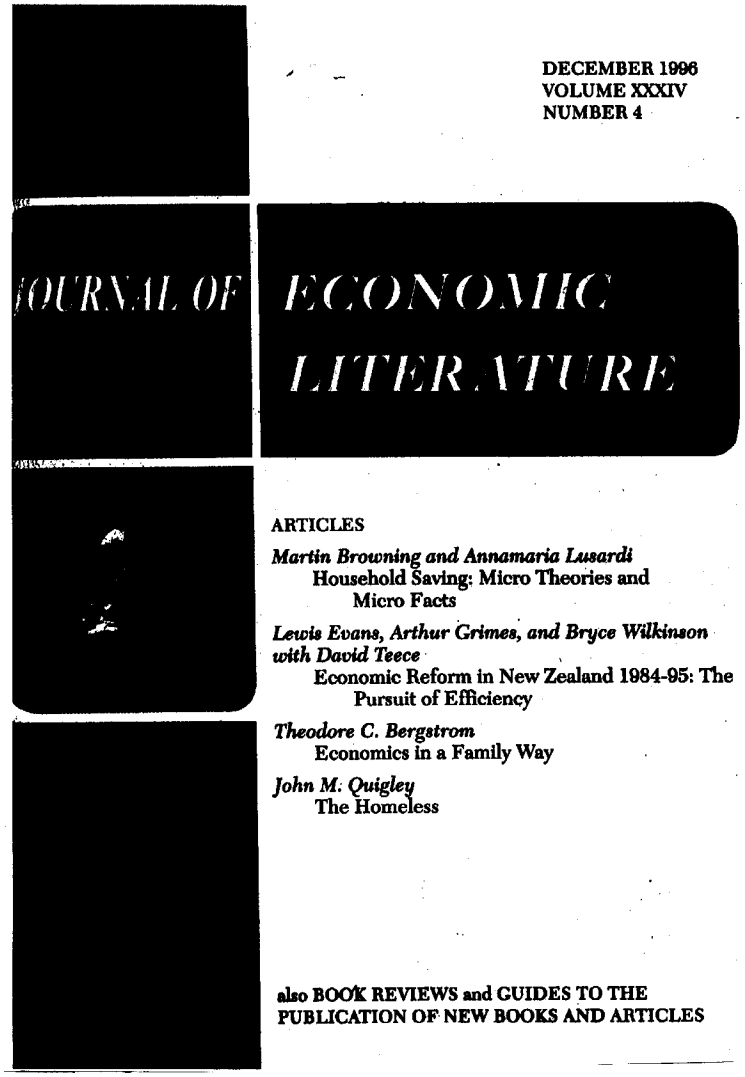

Valuing climate change: The economics of the greenhouse. By SAMUEL FANKHAUSER. London: Earthscan, 1995. Pp. xiv, 180. £14.95, paper. ISBN 1–85383–237–5. *JEL 95–1843*

If the author of this new book is correct, global climate change in the next century due to increased atmospheric concentrations of carbon dioxide (CO2) and other greenhouse gases will be an environmental problem of unprecedented proportions, both in terms of potential damages and likely costs of prevention and adaptation. Although not all economists will agree with the author's quantitative assessment, there is little doubt that the topic of global climate change raises intriguing analytical issues for economists. Exceptionally long time horizons—not just decades, but centuries—are necessary for adequately analyzing climate change policies; and tremendous uncertainties characterize crucial aspects of the problem.

Partly because of the prolonged lag times between emissions of major greenhouse gases and their predicted consequences, policy action may not wait for the resolution of much of this uncertainty. It therefore seems incumbent upon economists to provide guidance to political leaders in their quest for wise public policies. Does this new book by Samuel Fankhauser successfully serve such a purpose? Policy makers and their staffs will find much of this book accessible, but the author deliberately avoids drawing firm conclusions or making specific policy recommendations. A notable exception is provided by the author's recommendations of directions for future research.

This leads to another possible audience for the book: research economists. By providing a survey, if not a synthesis, of many of the leading economic studies of global climate change, Fankhauser is in a good position to identify areas where research needs are greatest. His review relies most heavily upon previous work by William Cline (1992), John Broome (1992), Alan Manne and Richard Richels (1992), and William Nordhaus, although Fankhauser apparently did not have access to Nordhaus' recent book (1994). This is unfortunate, because that book addresses several of the issues with which Fankhauser is most concerned, such as explicitly taking into account uncertainty when calculating expected benefits and costs of alternative policy scenarios.

Based upon his survey of previous research plus his own original work, Fankhauser notes that we know much more about the costs of alternative policies than about their respective benefits, and he makes a convincing case for greater future emphasis to be given to studies of the likely economic damages of global climate change. One should not assume, however, that estimating the costs of preventing global climate change is a simple task. On the contrary, truly reliable estimates of these costs will require improvements in current estimation methods. For example, the long time horizons that characterize greenhouse benefit-cost analyses suggest that tech-

nological change, particularly in regard to energy efficiency (and hence CO2 emissions), should be treated as economically endogenous when costs of CO2 reductions are estimated.

In keeping with previous studies, Fankhauser begins with an overview of the science of global climate change. He proceeds to an assessment of the social costs (damages) of climate change, drawing upon previous research as well as some new work by the author on the costs of adaptation to a sea level rise (due mainly to melting of Arctic ice). Next, he provides a survey of studies of the costs of greenhouse gas abatement, a summary of the critical issue of intertemporal discounting, and some brief discussion of benefit-cost and other decision-analytic methods for identifying optimal policy responses.

The book also includes a discussion of "policy instruments," but it is surprisingly brief considering the relative importance of the topic. Analysis of policy instruments is important because policy makers may well end up approaching climate change as they have nearly all other environmental issues: ignoring efficiency (benefit-cost) considerations when establishing goals, but sometimes heeding economic advice by adopting cost-effective, market-based policy instruments to achieve those goals. In this context, research has now demonstrated that a tradeable permit system could be a promising approach for allocating greenhouse abatement responsibilities among nations, whereas carbon taxes (or carbon permits) might be the preferred domestic instrument in many countries. Fankhauser's comparison of taxes and permits is limited to a review of Martin Weitzman's classic formulation regarding uncertainty and instrument choice. Fankhauser dispenses with conventional "command-and-control" policy instruments without analysis. This is surprising, because energy efficiency standards have already been employed—with some success—in a number of OECD countries.

For economists looking for a brief, initial overview of the topic of global climate change, this new book could provide a very useful introduction. For economists interested in analytical issues raised by global climate change assessment, Fankhauser provides a brief survey, although conceptual discussions seem tailored more for noneconomists, and there is little examination of the details of alternative analytical methods. For economists with active research programs on global climate change, most of this material will be review, with the important exception of the chapters on adaptation.

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