

“Economic Models and Global Climate Policy”

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Abstract

Computable general equilibrium (CGE) models are often considered to be the “Gold Standard” of applied economic policy research. Yet unresolved problems remain at the foundations of the modeling enterprise. For example, the ethical underpinnings of the models are usually obscured by the technical details. As a consequence, the implications of contestable assumptions are sometimes presented as though they were scientific results. These modeling issues can be illustrated by a series of simple and transparent examples. A thought experiment in which members of different generations trade with each other in a virtual market will be used to examine the effects of alternative assignments of global environmental rights on prices, interest rates, and the global distribution of income. In a simple model that is “semi-calibrated” to current and projected levels of the output of produced goods and to present and future quantities of global environmental goods, multiple equilibria cannot be ruled out. In addition, giving the present generation control over future environmental rights increases current interest rates. Assignment of the environmental rights in a way that leaves the present-day distribution of income unchanged but moves in the direction of equal per capita environmental rights in the future reduces projected future inequality, and may result in levels of future inequality comparable to today’s average within-country inequality.

Biographical sketch: Stephen J. DeCanio is Professor of Economics at the University of California, Santa Barbara. He received his Ph.D. in Economics from the Massachusetts Institute of Technology in 1972, and taught at Yale from 1972-1978 before moving to U.C.S.B. He served as Senior Staff Economist at the President’s Council of Economic Advisers (1986-1987), and four times has been a member of the Economic Options Panel convened by the United Nations Environment Programme to review economic aspects of the Montreal Protocol on Substances that Deplete the Ozone Layer. He was one of the recipients of the U.S. Environmental Protection Agency’s Stratospheric Ozone Protection Award in 1996. His research specializations are global environmental protection and the theory of the firm (particularly with regard to firms’ responses to environmental regulation). His most recent book, *Economic Models of Climate Change: A Critique* (Palgrave Macmillan, 2003) examines the foundations of the general equilibrium economic models currently deployed in the debate on climate policy. Since September 2004, he has been Director of the UCSB-DC Program, an academic unit that combines internships and research in Washington DC for UCSB students.