Ambiguity, Reasoned Determination, and Climate-Change Policy

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Abstract

This paper examines climate-change benefit-cost analysis in the presence of scientific uncertainty in the form of ambiguity. The specific issue addressed is the robustness of benefit-cost analyses of climate-change policy alternatives to relaxation of Savage's original axioms. Two alternatives to subjective expected utility (SEU) are considered: maximin expected utility (MEU) and incomplete expected utility (IEU). Among other results, it is demonstrated that polar opposite recommendations can emerge in an ambiguous decision setting even if all agree on Society's rate of time preference, Society's risk attitudes, the degree of ambiguity faced, and the scientific primitives. We show that, for a simple numerical simulation of our model, an MEU decision maker favors policies which immediately tackle climate change while an IEU decision prefers "business as usual".

Keywords: climate change, ambiguity, maximin expected utility, incomplete expected utility