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TIME PREFERENCE: REPLY TO TOL

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Richard Tol's (2002) comment raises a number of issues stemming from my article on time preference in global-warming calculations (Fearnside, 2002). Some of these need clarification.

The contribution of tropical deforestation to global warming would be substantial even if trace gases such as methane were ignored. However, consideration of these gases increases the impact of deforestation by 3-15%, based on the low and high trace-gas scenarios from Fearnside (2000) if one applies the IPCC global warming potentials (GWPs) for 100-year calculations from the Second Assessment Report (SAR) that are used under the Kyoto Protocol for the first commitment period (2008-2012). Time preference has a great influence on the importance attributed to short-lived gases like methane; time-preference choices other than those implied in the SAR 100-year GWPs could therefore alter the importance attached to efforts to reduce methane sources like tropical deforestation.

Tol considers the assumptions of conventional discounting to be "explicit," in contrast to an "ad-hoc" generation-weighting index. While the moral implications of different discount rates may be obvious to economists, I would argue that this is not true for the wider public that must, in the end, make political decisions on combating global warming. The generation-weighted index relates the implications of global warming directly to a time scale that anyone can understand: generations from the vantage of a single individual.

Tol extends my example by adding demographics and various alternatives as to the generations considered in the analysis. The example as presented is limited to the perspective of a single hypothetical decision-maker, and does not consider all possible situations, such as orphans. The great advantage of the example of generation weighting is its concreteness and simplicity. As is emphasized in my article, the example given is one of many possible formulations. Adding demographics is one option mentioned in my article. Although not stated in his comment, Tol has assigned an equal weight to each generation in arriving at his conclusion that pursuing my assumptions to their logical conclusion leads to zero discount rate. My formulation has no discounting over the course of each generation, but applies different weights to each generation to represent time preference. The point of much of my article is that equal weight should not be given to each generation. Presuming that weights decline with each successive generation (i.e., as in Fig. 2 of my paper), the result with demographics and additional generations would still be a decreasing time preference that is broadly similar to both discounting and to the example presented.

The example given in my paper has the effect of forcing people to examine the moral assumptions of decisions on global warming. It is particularly effective in showing the deficiency of the zero-discount special case that dominates most discussion of global warming. Tol points out that time preference is one of the most controversial subjects in

economics. Regardless of the mechanism adopted to give value to time, the result will be qualitatively similar if time has a positive value. The most fundamental need at present is to introduce this into global warming calculations, and the index proposed provides a means of viewing the moral implications of this for those who must make decisions now.

References

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