

Probability adjusted rank-discounted utilitarianism

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March 14, 2013

Abstract

Evaluation of climate policies and other long-term policy issues require a variable population setting where population is endogenously determined and uncertainty is taken into account. How to evaluate such policies while treating people equally? Here we analyze this question by generalizing and extending the rank-discounted utilitarian approach (Zuber & Asheim, *J. Econ. Theory* **147**, 2012, 1572–1601), by considering individuals rather than generations in a variable population setting where individuals exist with probability (possibly) smaller than 1. We propose and axiomatize the *probability-adjusted critical-level rank-discounted utilitarian* social welfare order, thereby contributing to population ethics under uncertainty. As a byproduct this analysis leads to a characterization of a rank-dependent expected utilitarian criterion with added structure in the special case where the probability-adjusted population size equals 1, thereby contributing to decision theory under uncertainty.

Keywords: Social evaluation, population ethics, critical-level utilitarianism, social discounting, uncertainty.

JEL Classification numbers: D63, D71, D81, H43, Q56.

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