

Marc Fleurbaey and Stéphane Zuber (2014). Discounting, beyond Utilitarianism. Economics Discussion Papers, No 2014-40, Kiel Institute for the World Economy. <http://www.economics-ejournal.org/economics/discussionpapers/2014-40>

## **Response to the Referee (author of report 2)**

We are very grateful for the comments. We are happy to revise the paper to take account of all the minor comments (your sections 3.1 and 4).

Regarding the main comments (sections 2 and 3):

1) On the overall narrative: we will revise the introduction and conclusion to make it clearer what our goal is, namely, a) show that utilitarianism is a special criterion embedded in a larger class (and it is the interplay of risk and inequalities that make the exploration of this wider class important), and b) show that other members of this wider class imply different formulas for the discount rate, which additional terms in the Ramsey classical formula which can be given interesting interpretations. These terms are absent under utilitarianism due to its additive structure. In this general narrative, the issue of population changes is made especially relevant by the risk aspect (risk of extinction in particular).

2) Setting the stage on population: If one is impartial toward all individuals of all times, the relevant population size for the evaluation of social welfare is the total population of all human beings (writing this makes it clear that we should also think of non-human animals, but we leave it aside). The difficulty in practice is to assess how a particular policy with medium-term demographic effects will ultimately affect the whole population. We will add a remark on this point.

3) Explanation of the EPEDE framework: thanks for raising these issues, we will clarify accordingly.

4) The EPEDE criteria: It is a good suggestion to add a summary of results and to put the record of EPEDE regarding axiom satisfaction in perspective, comparing it to the variants of utilitarianism.

5) We will relate more explicitly to Sen (thanks for pointing this paper!) and Gollier.

We will move the proof of Prop. 3 to the appendix, and label the terms.

We can indeed provide a little more discussion of the role of population growth and general social welfare in the discount rate formula. This may seem counter-intuitive but we believe it can be provided an explanation from the social criterion itself, and we will add that.

Thank you again for these very useful and thoughtful comments which will help us improve the paper.

The Authors