



Reconciling the Rawlsian and the utilitarian approaches to the maximization of social welfare



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ABSTRACT

Under a deadweight loss of tax and transfer, there is tension between the optimal policy choices of a Rawlsian social planner and a utilitarian social planner. However, when with a weight greater than a certain critical value the individuals' utility functions incorporate distaste for low relative income, a utilitarian will select exactly the same income distribution as a Rawlsian.

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1. Introduction

The Rawlsian approach to social welfare, built on the foundation of the “veil of ignorance” (Rawls, 1999, p. 118), measures the welfare of a society by the wellbeing of the worst-off individual (the maximin criterion). A utilitarian measures the welfare of a society by the sum of the individuals' utilities. Starting from such different perspectives, the optimal income distribution chosen by a Rawlsian social planner usually differs from the optimal income distribution chosen by a utilitarian social planner.

Rawls (1999, p. 182) acknowledges that utilitarianism is the single most important ethical theory with which he has to contend. In utilitarian ethics, the maximization of general welfare may require that one person's good is sacrificed to serve the greater good of the group of people. Rawlsian ethics, however, would never allow this. As Rawls' Difference Principle states, social and economic inequalities should be tolerated only when they are expected to benefit the disadvantaged. Rawls (1958) explicitly argues that his principles are more morally justified than the utilitarian principles because his will never condone institutions such as slavery,

whereas this need not be the case with utilitarian ethics. In such a situation, a utilitarian would simply weigh all the benefits and all the losses, so a priori we cannot exclude a configuration in which slavery will turn out to confer higher aggregate welfare than non-slavery. Rawls argues that if individuals were to select the concept of justice by which the society is to be regulated without knowing their position in the society (the “veil of ignorance”¹), they would choose principles that allow the least undesirable condition for the worst-off member over the utilitarian principles. This hypothetical contract is the basis of the Rawlsian society, and of the Rawlsian social welfare function.

Is it possible to reconcile the Rawlsian and the utilitarian approaches? In this paper, we present a protocol of reconciliation by introducing into the individuals' utility functions a distaste for low relative income.² We show that when the strength of the individuals' distaste for low relative income is greater than a critical value,

¹ “[N]o one knows his place in society, his class position or social status; nor does he know his fortune in the distribution of natural assets and abilities, his intelligence and strength, and the like” (Rawls, 1999, p. 118).

² Evidence from econometric studies, experimental economics, social psychology, and neuroscience indicates that humans routinely engage in interpersonal comparisons, and that the outcome of that engagement impinges on their sense of wellbeing. People are discontented when their consumption, income or

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which depends on the shape of utility functions of the individuals and the initial distribution of incomes, then even under the utilitarian criterion, the maximization of social welfare aligns with the maximization of the utility of the worst-off individual. Intuitively, the more a society is concerned about “free and equal personality,” the greater is the distaste for low relative income. Indeed, in a contribution to the study of social welfare, Harsanyi (1955) assigns a prominent role to interpersonal comparisons in the social welfare function. Thus, this paper presents an explanation in the spirit of Harsanyi (1955) and Rawls (1974), reconciling the Rawlsian and the utilitarian criteria of social welfare maximization.

Ours is not the first attempt to align Rawlsianism with utilitarianism. Arrow (1973) argued that if individuals are extremely risk averse, the maximization of social welfare is equivalent to the maximization of the utility of the worst-off individual.³ However, as we show below, equivalence of the two approaches can be achieved when individuals exhibit little risk aversion in the sense that their degree of relative risk aversion is small; specifically, less or equal to one. Yaari (1981) provided a proof that there exists a specific set of weights of the individuals' utilities in the utilitarian social welfare function under which the utilitarian and the Rawlsian social optima coincide. However, our reconciliation protocol does not require any specific weighting of the individuals' utilities in the social welfare function; specifically, the individuals are given the same weight each, equal to one, in the utilitarian welfare function. In comparison with Arrow (1973) and Yaari (1981), we obtain reconciliation under less stringent conditions with respect to the preference structure of the individuals and/or the construction of the social welfare function; namely, we align the utilitarian and the Rawlsian perspectives by taking into consideration the well documented concern of individuals at having low relative income.

Nor are we the first to study the interaction between comparison utility and optimal taxation policy. Probably the closest to our work is a paper by Boskin and Sheshinski (1978) who investigate optimal tax rates for utilitarian and maximin criteria of social welfare under varying intensities of the distaste for low relative income in the individuals' utility functions. They find that when a distaste for low relative income affects strongly the utilities of the individuals, maximization of both utilitarian and maximin measures of social welfare calls for highly progressive taxation – a result that reaffirms a natural intuition: comparison utility increases optimal redistribution. However, having admitted a distaste for low relative income, Boskin and Sheshinski (1978) are generally not interested in the convergence of the utilitarian and maximin approaches.⁴ Our paper takes a step further to show not only that redistribution becomes more intensive as the individuals' distaste for low relative income is taken into account, but also that it is likely that in such a situation, the goals of the utilitarian social planner and the Rawlsian social planner are exactly congruent.

Hammond (1977) links equality of utilities, namely equality of the individuals' levels of utility, with utilitarianism. His approach is to tailor the utilitarian social welfare function such as to render it “equity-regarding.” In our model, however, we incorporate the

distaste for low relative income in the utility functions of the individuals, not in the preference structure of the social planner as such. Namely, the preference for equity flows from the bottom-up rather than being “imposed” top-down. In addition, Hammond (1977) merely mentions that deadweight losses in the tax and transfer system may bear significantly on the optimality of a redistribution aimed at conferring equity on a population. In contrast, in our model, the deadweight loss is the reason why the Rawlsian and utilitarian optimal distributions can differ in the first place.

Using an example of a two-person population, in the next section we illustrate the tension between the goal of a Rawlsian social planner and the goal of a “standard” utilitarian social planner, that is, a utilitarian social planner who is not worried about individuals' distaste for low relative income. In Section 3 we conduct an analysis of the distributions of income chosen by, respectively, a Rawlsian social planner, a “standard” utilitarian social planner, and a low-relative-income-sensitive utilitarian social planner, for a population consisting of more than two individuals. We prove the existence of a critical value for the intensity of the individuals' distaste for low relative income under which the optimal income distribution chosen by a Rawlsian social planner is the same as that chosen by a low-relative-income-sensitive utilitarian social planner. In Section 4 we present this critical value for the case of two individuals. Section 5 concludes.

2. The tension between the optimal policy choices of a Rawlsian and a utilitarian – an example

The following example illustrates the tension between the two approaches. In a two-person population, one individual, the “rich,” has 14 units of income; the other individual, the “poor,” has 2 units of income. Let the preferences of an individual be given by a logarithmic utility function, $u(x) = \ln x$, where $x > 0$ is the individual's income. A social planner can revise the income distribution by transferring income between the two individuals – specifically from the “rich” to the “poor.” Because of a deadweight loss of tax and transfer, only a fraction of the taxed income ends up being transferred; suppose that half of the amount t taken from the “rich” ends up in the hands (or in the pocket) of the “poor.” Then, the post-transfer utility levels are $\ln(14-t)$ of the “rich,” and $\ln(2+t/2)$ of the “poor.”

How will a Rawlsian choose the optimal t ? Following the maximin criterion, he maximizes the social welfare function

$$SWF_R(t) = \min\{\ln(14-t), \ln(2+t/2)\}$$

over $t \in [0, 14]$. Clearly, as long as $2+t/2 \leq 14-t$, we will have $\min\{\ln(14-t), \ln(2+t/2)\} = \ln(2+t/2)$. Therefore, a Rawlsian social planner will find it optimal to raise the income of the “poor” by means of a transfer from the “rich.” When equality of incomes is reached, the Rawlsian social planner will not take away any additional income from the “rich” because if he were to do so, the “rich” would become the worst-off member of the population, and social welfare would register a decline. Thus, a Rawlsian social planner will choose to equalize incomes, that is, set the optimal amount to be taken from the “rich” at $t^R = 8$, which results in a post-transfer income of 6 of each individual.

A utilitarian social planner, however, maximizes the social welfare function that is the sum of the individuals' utilities

$$SWF_U(t) = \ln(14-t) + \ln(2+t/2)$$

over $t \in [0, 14]$. The first order condition,

$$\frac{1}{2(2+t/2)} - \frac{1}{14-t} = 0,$$

social standing fall below those of others with whom they naturally compare themselves (those who constitute their “comparison group”). Examples of studies that recognize such discontent include Stark and Taylor (1991), Zizzo and Oswald (2001), Luttmer (2005), Fliessbach et al. (2007), Blanchflower and Oswald (2008), Takahashi et al. (2009), Stark and Fan (2011), Stark and Hyll (2011), Fan and Stark (2011), Stark et al. (2012), and Card et al. (2012). Stark (2013) presents corroborative evidence from physiology.

³ Rawls (1974) comments that Arrow's (1973) argument is not sufficiently compelling, intimating that “the aspirations of free and equal personality point directly to the maximin criterion.”

⁴ Frank (1985) and Ireland (2001) show that progressive taxation can be Pareto improving if people care about relative income.

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