"Doing Rawls justice: evidence from PSID"

Dear Referee,

thanks very much for revising my paper carefully. Your feedbacks and suggestions have been stimulating new reflections which, I hope, will be of help for improving my research. In what follows, I'll try to address exclusively the "weaknesses of the paper/suggested improvements" and "minor points" as reported in your report. Your comments are reported in **bold**.

Restrictive notion of legitimacy. I think the author should discuss two important differences between his proposal and the literature, especially Roemer. The author proposes to identify legitimate economic disparities upon very restrictive criteria that (as the author mention at pg 25§1) account for both implication (condition i) above) and origin (condition ii) and iii) above) of inequality. The proposed inequity measure aggregates residual economic disparities that are not legitimate.

I do agree that the notion of legitimacy proposed in this paper, and inspired by Rawls' idea of *justice as fairness*, is more restrictive than Roemer's one. Rawls theory goes beyond egalitarianism of opportunity by accommodating – behind the veil of ignorance – the Difference Principle, whose main logic is not relevant in Roemer's idea of *levelling the playing field*. In some sense, apart from opportunity sets, inequalities are additionally required to be efficiency-improving while granting equal basic liberties (primary goods) for all individuals.

I believe this *Social Contract* may be of some interest within the old tradition of *Political Economy* (*Oeconomie Politique*), as well as within the more up-to-date *Economics*. As such, in this paper I argue that the "Difference Principle" may be rendered within an ex-post perspective in such a way as to formalize a "compromise" between egalitarianism of outcomes and egalitarianism of opportunity.

The inequity measure proposed in this paper – Rawlsian in spirit – is defined as an aggregation of pairwise illegitimate income gaps, whereas Roemer's idea of *levelling the playing field* has mostly been applied by implementing parametric estimation strategies. In one of my previous papers (Abatemarco 2015), I highlighted the major pros and cons of both approaches. This is probably an aspect I should have mentioned in this paper as well.

Types order. The notion of legitimacy here builds on a key condition: that natural and social circumstances can be unambiguously ranked by their expected, not realized, implications on economic outcomes. So, a outcome disparity is legitimate if its sign does not match the postulated implications of the circumstances on outcomes. Disparities are fair as long as incomes do not stand in a monotonic relation with the implications that being exposed to better circumstances are expected to have on outcomes. Existing literature proceed differently. Generally, normative structure is introduced to qualify illegitimate inequalities, which are then quantified accordingly. Furthermore, in Roemer the types' disadvantage crucially depends on the associated opportunities distribution, from where the "min of means" criterion.

Thanks for highlighting this aspect which is probably to be better emphasized in the paper. The original proposal by Roemer strongly relies on the existence of a disjoint and exhaustive circumstance-based partition of the population, whereas my approach, as you noticed, also requires the identification of better/worse circumstances. Even if the possibility of orderings of opportunity sets has been already considered in the existing literature (e.g., Kranich 1996, Ok 1997, Weymark 2003), I do agree that the possibility of a "direct" measure of the propitiousness of circumstances is not straightforward. However, to

the extent that circumstances, effort and outcomes are observable ex-post, one may capture the impact of circumstances so as to infer (indirectly) a propitiousness ordering. This is not very distant from Rawls' story about the impossibility of measuring native natural endowments as opposed to (measurable) realized abilities and talent (Rawls, 1999).

Correlated circumstances. I believe the author should warn the reader about these points. First, because they would help framing the paper over growing literature on equality of opportunity. Second, because this helps understanding the implications that the choice of circumstances, and especially the correlation between circumstances, might have on the results. The proposed approach overlook potentially unclear consequences of correlation in circumstances on outcomes. For instance, being raised in a urbanized area might be a "more propitious" circumstance than being raised in the countryside, as more educational amenities are available in the cities. However, parental segregation by parental abilities (reflected in their incomes and education) in the cities rises concerns about the fact that being educated in segregated school districts of a city unambiguously rises human capital of the offspring. So, economic disparities that are beneficial to those raised in the countryside compared to those raised in the city are legitimate, even though they might simply reflect the implications of segregation by parental skills (unobservable). In this situation, the child raised in neighborhood where low-skills parents are overrepresented might face worst circumstances than children raised in the countryside, although these are largely neglected by the approach.
Similar critics applies to the choice of effort. However, effort is generally not observable and monotonicity assumptions are usually postulate to identify its consequences on the distribution of type-specific incomes. The author takes these identification condition (monotonicity) for granted, and defines the "partial responsibility ordering" (pg. 14) on these grounds. Differently from before, but similar to Roemer, effort is now defined on the bases of consequences rather than of origins. This point deserves to be discussed in the paper.

The theoretical underpinnings of this paper can be endorsed or not depending on the ideological perspective, but the empirical contribution must be definitely taken with a grain of salt. It seems to me, but I can't swear to it, this is a drawback affecting the entire literature on the measurement of equality of opportunity. This aspect is rigorously discussed in Ramos and Van de gaer (2012), and emphasized in Abatemarco (2015).[1] Thus, I do agree I should have warned the reader on this aspect, as major limitations of the circumstance-based partition of the population must be always accounted for when looking at resulting empirical evidences. That said, this may be not a serious problem in this paper, for the major contribution of the empirical analysis comes from the comparison with previous results as obtained under Roemer's hypothesis, which is huge (i.e., from 20% to 60%) and disconcerting (at least, very distant from the idea of a *fair system of cooperation*).
Considering the specific example you mentioned above, in the paper I consider two social circumstance variables, i.e. economic situation of parents in the early years, and place of origin in the early years. Obviously, the place of origin, as defined in terms of the degree of urbanization, is not a direct measure of the chance of access to a better education/training system, because pupils in the same big city may have very different education and training opportunities depending, among all, on the neighbourhood. However, I would reasonably expect that, within the same big city, the opportunities to access better schools is

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[1] "*On the one hand, this approach neglects the possibility of the well-known indirect effect of circumstances on outcomes (through effort variables), that is, independency between circumstances and responsible choices is implicitly assumed. Additionally, the possibility of omitted variables (i.e., unobserved circumstances) is known to be a problem, as it may cause an erroneous identification of effort (as in the parametric approach). On the other hand, this approach does not require specific assumptions for the functional form of the outcome function and for the effect of circumstances on observable effort variables (e.g., Bourguignon et al. 2007; Björklund et al. 2012).*
Most importantly, the non-parametric approach proposed above may be particularly convenient because the "partial" ordering may successfully mitigate errors in the identification of effort due to omitted variables, especially when the outcomes (rankings) within each opportunity type are not seriously influenced by unobservable circumstances (Ramos and Van de gaer 2012)." (Abatemarco 2015)

higher for children of richer families. Then, some of the information highlighted in your example is hopefully captured by the use of the two social circumstance variables considered in the paper, i.e., economic situation of parents in the early years, and place of origin in the early years. E.g., given that the family of origin of an individual grown up in a countryside may be rich or poor, the same possibility holds for an individual grown up in a big city. According to the partial ordering proposed in the paper, if the former individual comes from a rich family in the countryside, while the latter comes from a poor family in the big city, then the two opportunity sets are said to be non-comparable. However, if the family of origins are both rich or both poor, then the opportunity set of the latter is said to be dominating, so that an income gap in favour of the former is said to be fair (fair equality of opportunity), yet not legitimate.

<u>Minor comments</u>

The individual-based approach on economic disparities can be readily contrasted to the proposals made by other papers to measure fairness on the bases of economic disparities in type-specific distributions (one example is http://ftp.iza.org/dp8503.pdf). Comparisons of the two approaches might be of interest.

Thanks for noticing me about this approach. I read the paper, even if I need to come back to it to better understand the opportunity of a comparison between these two methodologies. At a first insight, it seems to me that the philosophical foundations behind the two approaches are very different to each other, for the main idea behind Rawlsian theory of justice strongly relies on justice, not social welfare (Rawls 1999).

Is it there a specific reason to measure individual opportunities through disposable income, a measure that is also sensible to other factors such as composition of the household (to compute tax allowances and tax credits)? An alternative can be gross earnings of male workers.

Gross earnings are available from PSID as well. E.g., by disregarding "transfer income" the analysis would not account for a part of the government intervention to close the gap. However, it might be of some interest to compare results when accounting/disregarding public (monetary and non-monetary) transfers (I'm not sure if other variables required for this comparison are available in PSID) . Such a comparison may capture, in some sense, fair/good redistribution – still rawlsian in spirit – due to public intervention.

Abstract: "…by resorting on the well known…."

English will be improved. Thanks.

Page 13, the paragraph "Evidently, the same…." repeats the first paragraph of the page with n replaced by s. It can be possibly simplified.

Ok. Thanks.

Definition 3.3: Is the approach robust to the choice of z?

In the paper, official poverty thresholds as published by the US Census Bureau are used. Results are not sensible to small changes in the variation of the poverty threshold, but remarkable variations occur for different poverty thresholds in nature. This does not strikes me, as the definition of a social minimum ensuring fair equality of opportunity is crucial in Rawls' thought. Obviously this value is expected to influence results, so that depending on what is meant by poverty, results may and (hopefully) will differ.

Page 19, line 8 : "…whenever $h, k \ni \Omega$."

This is my personal problem with the software (editor) I use for Latex. I'll fix it.