Dear Referee,
thanks for revising my paper, and for giving me the chance for improving the paper.
In what follows, I report your comments in **bold** and my replies in blue font.

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1. The paper is just too long. I think there are information that are not needed and this makes the paper a little disorganized and not very homogeneous. For instance, the sections "Inequality on growth" and "Growth on poverty" seems redundant and out of the focus of the paper. As a result, it becomes difficult to read the paper and to understand its aim and contribution.

Author. The difference principle requires any legitimate pairwise inequality to be to everyone's advantage and, especially, to the greatest benefit to the poorest part of the population.

The first part of this sentence evokes the implications of inequality on growth, whereas the second part emphasizes the idea of pro-poor growth (pp. 61-66, "Justice as Fairness: A Restatement", 1999).

As such, it seems to me that any possibility to interpret Rawls' though in such a way as to define an empirical strategy for the (non-parametric) estimation of equity has to deal with two major issues in economics: (i) inequality effects on growth, and (ii) growth effects on poverty.
To the extent that very different theories have been proposed on these two topics during the last century, the selection of one or the other approach has to be motivated in the paper according to Rawls' thought.

2. In relation to my comment before, aims and contributions must be strengthened.

Author. In relation to my reply before, the novelty of this approach consists of the introduction of pro-poor growth issues in a more general framework of equity assessment.

It seems to me that this aspect has been clearly and carefully emphasized in the Introduction of the paper.

From p.2 (Introduction)

"From the perspective of a conservative egalitarian, inequalities are illegitimate (and so, compensation deserving) or legitimate (and so, not compensation deserving) depending on their determinants (e.g., luck, responsible choices), let's say, origins . This view can be seen as innervating Sen's (1992) capability approach, as well as Roemer's (1993, 1998) ideal of leveling the playing field, or luck egalitarianism (e.g., Dworkin 1981a, 1981b, Cohen 1989), and strict egalitarianism of opportunity (Arneson 1999).

Differently, outcome egalitarians deny that members of a society are ever non-identical in a distributively important sense. Here, it is said, in the name of individual responsibility and meritocracy, human rights of equal respect, equal social status, equal participation in democratic arenas are often violated in such a way as to welcome oppression and destitution (Anderson 1999). In this view, inequalities are said to be illegitimate due to their immediate consequences - e.g., subordination, exploitation and humiliation - whatever their origins. To the extent that one or the other perspective - origins, or consequences - is spoused, any attempt to reconcile distributive judgments is deemed to failure.

In this paper we propose a more general approach by which any pairwise disparity is said to be legitimate or illegitimate depending on both origins and consequences of inequality.

The contribution of this paper intends to be both methodological and empirical. From a methodological point of view, according to our interpretation of Rawls' thought, we propose a 'pragmatical' approach by which Rawlsian inequity can be (non-parametrically) estimated from income distributions.…From an empirical point of view, given the separation between social and natural circumstances that is innervating Rawls' thought …our analysis highlights that opting for Rawlsian idea of justice more than doubles the share of illegitimate inequalities in the US."

3. It is not clear to me how this approach differs from the Equality of Opportunity approach in the light of Roemer (1998), both from a conceptual and methodological point of view.
In fact, in relation to the latter, the author uses the same definitions of this literature (for instance, types, opportunity profiles), which makes more difficult to understand the novelty of his approach. Furthermore, when the author uses the terms "types" and "opportunity profiles" he should mention that these terms are borrowed from the Equality of Opportunity literature with the appropriate references.

Author. Concerning the difference with Roemer's approach to equality of opportunity, please see my reply at your comment no. 2 and your comment no. 5. Also, see comments in the body of the paper on p.8 and p.20.

As far as terms like "types" and "opportunity profiles" are concerned, I'm not sure it would be convenient to claim that these terms are "borrowed from the Equality of Opportunity literature", because my paper is just in the same literature. However, I may add a footnote telling about the use of these terms in this literature (e.g., "tranches" instead of "opportunity types" is used as well in this literature, e.g., among all, Peragine (2004), Social Choice and Welfare).

4. In the paper, the author often refers to a "pairwise inequality", but this definition seems to be inconsistent with his framework where inequality refers to a distribution made of N individuals.

Author. I don't see the point. Sorry about that.
E.g., from Sen (1973), the Gini index – measuring inequality in a population of N individual - can be rewritten as an un-weighted aggregation of pairwise inequalities.
In addition, Rawls refers to "social and economic inequalities", not inequality (e.g., see p.40 "Justice as Fairness: A Restatement", 1999).

5. Second paragraph, page 6, "pairwise outcome disparities are unfair and so illegitimate if and only if the better-off individual coincides with the better endowed one in terms of social resources". This sentence is wired. Suppose that the better endowed individual coincides with the better-off just because he exerted more effort, I would not judge this disparity to be unfair?

Author. If the outcome gap originates from both better social circumstances (e.g., richer family of origin) and higher effort (better responsible choices), then one may reasonably claim that a part of the entire gap, the one due to higher effort, is fair, whereas the other is not. This is just what is done in the whole literature on parametric estimation of inequality of opportunity as intended in Roemer's ideal of levelling the playing field.

Rawls' target instead is not levelling, but stability. From p. 3, "... *Rawls (1971) proposes a normative framework inspired to the ideal of social cooperation for the constitution of a well-ordered society where the stability of political institutions is obtained by ensuring equal basic rights and liberties for all and the legitimation of social and economic inequalities (reciprocity principle).*" In this perspective, what really matter are complaints on existing inequalities (Temkin 1986, Cowell 2004). From p. 5 "…, *social and economic inequalities are required to be 'complaint-free' in the view of Rawlsian ideal of social cooperation, independently of the contribution of un/fairness to the single outcome gap*".

Actually, I do agree with you that the accessibility of the paper may be improved by giving more emphasis to this aspect when comparing Roemer and Rawls' ideal. Thanks very much.

6. Page 11 and 12, the author defines a natural opportunity type as a combination of discrete values and a social opportunity type as a combination of discrete values. I think that the assumption that the values are discrete is too strong. Some justification for this assumption is needed. Would the framework work with continuous values?

Author. Some of the variables used in the standard literature on the estimation of inequality of opportunity are discrete by definition, e.g., gender (male or female), ethnicity (black or white),... (e.g., please see references in my paper). Some others are not necessarily discrete a priori, but it is usually the case that discrete variables are reported in most important databases, e.g. self-reported health (good, bad …), IQ test, … Please see footnote 27 for details on the construction of the discrete variables.

7. Table 1, page 23, is not clear. What is the ID column? On the base of which criteria are circumstances defined as favourable?

Author. On the definition of propitiousness orderings see p.12-13 and footnote 17. Also, for a more detailed discussion also see Types Order in the Reply to Referee 1.
Given the 64 subgroups originated from social and natural circumstances, ID is the identifier of the subgroup. Thanks, I will add specifications on this.

8. At page 24-25 the author compare his results with what he calls "Roemer's inequality of opportunity". First, the author should be clearer when he refers to this "Roemer's inequality of opportunity", what is this exactly? Second, the author should report these results in a

table to make comparisons easier. Probably, he could report estimates of Roemer's inequality of opportunity and Rawlsian inequality using exactly the same samples.

Author. By "Roemer's inequality of opportunity" I refer to inequality of opportunity as intended within Roemer's ideal of levelling the playing field. Roemer's approach is well known in this literature. The main idea of this approach has been reported in the paper on p.2 "*From the perspective of a conservative egalitarian, inequalities are illegitimate (and so, compensation deserving) or legitimate (and so, not compensation deserving) depending on their determinants (e.g., luck, responsible choices), let's say, origins. This view can be seen as innervating Sen's (1992) capability approach, as well as Roemer's (1993, 1998) ideal of leveling the playing field , or luck egalitarianism (e.g., Dworkin 1981a, 1981b, Cohen 1989), and strict egalitarianism of opportunity (Arneson 1999).*" Also, on p.14 "*In line with Roemer's (1993) pragmatic theory, if a disjoint and exhaustive partition rule is assumed to exist by which individuals within the same population can be grouped depending on the opportunity profile (accounting for both natural and social circumstances), two individuals belonging to different subgroups are said to be comparable in terms of responsible choices (not necessarily the same degree of responsibility) if they are equally ranked in the respective subgroup income distributions. In this sense, the income gap among equally ranked individuals may capture the contribution of circumstances to overall inequality.*"

In relation to your second comment, previous evidences from the same database (Abatemarco 2015) are already reported in the body of the paper. These results are additionally supported by different methodologies (semi-paramatric) as applied to the same dataset (Pistolesi, 2009). I'm not sure that these results should be additionally reported in a Table.

9. A discussion that motivates the difference between the results obtained implementing his approach and those obtained implementing the Roemer approach would be beneficial for the paper.

Author. From p. 24-25: "*This result sensibly differs with respect to previous parametric and non-parametric empirical evidences for Roemer's inequality of opportunity, which is usually found between 15% and 20% (Abatemarco 2015, Pistolesi 2009). Nevertheless, this is just what one may expect; Roemer's view is grounded on the legitimation of income gaps with respect to the sole origins of inequality, whereas Rawlsian inequity is defined by accounting for both the origins and the implications of income inequality.*" I think the second part of this quotation makes the point.

10. Page 26, second paragraph. I would definitely eliminate the sentence "However, to our opinion, part of this success… suitable for empirical investigations."

Author. Why? I would be happy to discuss this point.
During the last decade, Roemer's approach to equality of opportunity has been largely implemented in the empirical literature (5 references in my paper only). This is not the case of Rawls' ideal of "justice as fairness" (to my knowledge, this is the first empirical work on Rawlsian Equality Principle). So, why? Is this because Roemer's ideal captures social (ethical, impartial) preferences better than Rawls' one? As I wrote in the paper, I do agree with Fleurbaey (2001) that the advent of the Protestant culture is one of the causes (e.g., Fleurbaey 2001). However, I don't think this is the only reason.
Rawls theory is not rejecting the idea behind the principle of reward and compensation (e.g., Roemer); it goes beyond these principles by offering a compromise between opportunity and

outcome egalitarianism. Unfortunately, the introduction of the Difference Principle represents a serious threat for empirical investigations as, on my opinion, it is not straightforward to identify pro-poor growth effects of inequalities. It seems to me that this aspect has additionally contributed to reduce the academic interest on Rawls' ideal of Equality.

11. The paper contains too many quotations. I have counted 20 of them.

Author. In a preliminary version of this paper the number of quotations was definitely lower. However, I realized that this is counterproductive for the accessibility of the paper because alternative interpretations of Rawls' theory have been proposed in the economic literature (Rawls is a philosopher). As such, the reader may be strongly influenced depending on previous readings on Rawls' theory. So, to avoid misunderstanding on the philosophical underpinnings, I opted for quoting Rawls words.

12. There are many typos. Some of them are:
- Incomplete sentence, page 7 second to last paragraph before section a) "Differently, in Rawlsian view inequalities are good… benefit the poorest individuals";
- Second paragraph, page 8 "but it also likely that" should be "but it is also likely that";
- Third paragraph, page 13 "within the income generation process" should be "within the income generating process";
- In many parts of the paper "responsible choices" should be "responsibility choices";
- First paragraph, page 17 "differently defined depending on main objectives" should be "differently defined depending on main objectives";
- Second paragraph, page 20 "Proposition 3.1 emphasizes that within Rawlsian view…" should be "Proposition 3.1 emphasizes that within the Rawlsian view…";
- Second to last paragraph, page 25 "this means that the financial crises has…" should be "this means that the financial crisis has…"

Author. Thanks.

References not listed in the paper

Cowell, F and Ebert U: Complaints and inequality, Social Choice and Welfare 23 (1), 71 { 89 (2004).
Temkin, L: Inequality, Philosophy and Public A airs 15, 99 { 121 (1986).