

## **Abstract for “Equalization of Opportunity: Definitions and Implementable Conditions”**

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### **Short Abstract**

This paper develops a criterion of opportunity equalization, that is consistent with theoretical views of equality of opportunity. Our analysis rests on the characterization of inequality of opportunity as a situation where some groups in society enjoy an illegitimate advantage. In this context, equalization of opportunity requires that the extent of the illegitimate advantage enjoyed by the privileged groups falls. Of course, for the judgement over opportunity equalization to be robust, one should require that the assessment of the change in the advantage of the advantaged group be satisfied for the broadest class of individual preferences. We formalize this criterion by resorting to a decision theory perspective and we derive an empirical condition for equalization that is defined on the sole basis of observed opportunity distributions. We discuss observability constraints and offer an empirical testing procedure to implement this condition. Lastly, we apply these criteria to the study of the equalizing impact of educational policy in France.

### **Long Abstract**

Equality of opportunity (EOP) has gained popularity, in scholarly debates as well as among policy-makers, for defining the relevant objective for distributive justice. Nowadays, public policy often explicitly seeks to level the playing field among citizens and to equalize opportunities for a broad range of individual social and economic outcomes (e.g. education, health, income). Assessing whether policy intervention succeeds at equalizing opportunities thus represents a key issue for policy evaluation. But what criterion should we use to conduct such an evaluation? The equality of opportunity (henceforth EOP) perspective amounts to draw a distinction between fair and unfair inequality of individual outcomes. Fairness judgements, according to the EOP approach, require to take into account the determinants of individual outcomes. This leads to distinguish between two sets of determinants: on the one hand, effort gathers the legitimate sources of inequality among individuals. On the other hand, circumstances correspond to the set of morally-irrelevant factors fostering inequalities across individuals that call for compensation. Define a type as the set of individuals with similar circumstances. In short, equality of opportunity requires that, given effort, no type is advantaged in the sense of having access to a more favorable opportunity set. This can be seen as a conditional equality principle. This principle might translate into different formal definitions of equality of opportunity, depending on the way the individual opportunity set and the notion of advantage are modeled. In the model of Lefranc, Pistolesi and Trannoy (2009), individual outcomes are not fully determined by circumstances and effort, owing to the influence of a third set of determinants, luck in their terminology. Conditional on circumstances and effort, individual outcomes can be seen as stochastic and the opportunity set offered to a given individual can be characterized by the distribution of outcome conditional on circumstances and effort.

The contribution of this paper is to offer a criterion for ranking social states when equality of opportunity does not prevail. Our objective is to provide an ordinal ranking of possible states, from the

perspective of equality of opportunity, in order to make statements such as: 'Inequality of opportunity is higher in state 0 than in state 1', where different states might correspond to different countries, different time periods or different policy regimes.

Our main concern is to develop a criterion that is robust to the specific individual and social welfare functions used in the evaluation. The main idea behind our ranking criterion lies in the following equalization principle. When equality of opportunity does not prevail, individuals are not indifferent between the opportunity sets offered to different types. Furthermore, they are able, given their individual preferences, to rank the different types in society, by order of the advantage they confer, in both state 0 and state 1. Our equalization principle states that individuals in society agree that the advantage conferred to the privileged' types falls.

Turning this intuitive principal into a formal criterion raises several issues. First, it requires a cardinal evaluation of the advantage enjoyed by the advantaged types over the least privileged ones. Our analysis relies on economic measures of the distance between outcome distributions, as developed by Ebert (1984) and Chakravarty and Dutta (1987). Under this assumption, the equalization principle requires that the distance between the outcome distributions of the different types fall. Of course, given that the distance metric depends on individual preferences, robustness requires that the distance between distribution falls for the broadest possible class of preferences. A key question in this respect, is whether a consensus can be reached in judging that the economic distance has fallen. When consensus cannot be reached, a related issue is to characterize the subset of preferences over which individuals unanimously agree on their judgement over the change in the economic distance.

The second issue pertains to identification. In practice, we only observe (at best) the outcome distribution of each type but we do not observe individual preferences. Since verifying the distance condition for all possible preferences is not feasible, we would like to define a tractable condition, involving only the observed outcome distributions, that would be equivalent to the distance reduction condition. We show that such a condition can be formulated provided that individuals agree in the ranking of types both in state 0 and in state 1. We refer to this condition as outcome gap dominance: it requires that the gap in the cumulative outcome distribution between two types falls when moving from state 1 to state 0. On the contrary, when individuals disagree on the ranking of types, they cannot in general unanimously agree that the distance between types has fallen between state 0 and state 1, regardless of their preferences. However, in this case, it is possible to identify subclasses of preferences in which individuals agree on the ranking of types in each state and to single out a necessary and sufficient condition for equalization within this subclass of preferences. This can only be performed within a restricted set of preferences. In this paper, we mainly focus on the class of rank-dependent preferences (Yaari 1987), although we discuss extensions.