Authors: Pablo A. Mitnik, Anne-Line K. Helsø, and Victoria Bryant
Provisional title: “Inequality of Opportunity for Income in Denmark and the United States: A Comparison Based on Administrative Data.”

Abstract

Over the last 20 years, an influential empirical literature on inequality of opportunity (IOp) has developed. In terms of philosophical foundations, this literature has mostly adopted the “luck egalitarian” understanding of IOp, in which only inequalities for which individuals cannot be held responsible are deemed unjust. Empirically, most analyses have implemented a particular variant of what is known as the “ex-ante approach.” When applied to the study of IOp for income (IOpI), this approach posits that (a) “circumstances” are all the things beyond people’s control (and for which, therefore, they cannot be held responsible); (b) “types” are groups of individuals who share the same circumstances; (c) the individuals belonging to a type share a common “opportunity set,” i.e., a set of income prospects; (d) the value of each opportunity set is measured by the mean of the realized incomes of those belonging to the type; and (e) inequality of opportunity is the inequality in opportunity-set values across individuals.

How much variation in IOpI is there across highly advanced economies that differ in terms of their labor-market, welfare, education, job training, and tax policies? Answering this question is made difficult by a mix of conceptual, methodological and empirical obstacles. First, IOpI measured with respect to any incomplete set of circumstances provides a lower bound to total IOpI. At the same time, in practice IOpI is always measured with respect to an incomplete set of circumstances, and the set of circumstances included in the analysis varies greatly across countries (across or even within studies). Second, IOpI has been measured using different income concepts across studies, which makes comparing their results very difficult. Third, the survey data used do not cover well the upper tail of income distributions, which can be expected to distort, perhaps greatly, the measurement of IOpI. Fourth, the IOpI literature has ignored the serious methodological problems associated with using short-run proxy measures to estimate quantities defined (or that should have been defined) in terms of long-run income measures. Lastly, comparisons are marred by cross-country differences in the cohorts and periods that have been studied.

In our paper, we start to address the question posed above by focusing on Denmark and the United States, and tackle all the problems just listed. We make fully explicit the relational nature of any IOpI measure by relying on the notion of “inequality of opportunity modulo W,” where “modulo W” means here “computed with respect to the incomplete set of circumstances W.” Then, we use exactly the same Ws (parental income and gender, and parental income alone) for both countries. We also use high-quality administrative data rather than survey data: Register data for Denmark and the Statistics of Income Mobility Panel for the U.S. We focus on the same birth cohorts (1972-1975) and time period (2010), and use the same income concepts (i.e., individual labor earnings, family income and disposable family income) for both countries. Lastly, we identify and address the problems generated by the use of short-run measures of income, including (a) lifecycle biases; (b) positive biases in estimates of total inequality, which means that existing estimates of relative IOp (i.e., IOp as a share of total inequality) are lower-bound estimates; and (c) negative selection biases in estimates of total inequality based on generalized entropy indices, which suggests that these indices, including the very popular mean logarithmic deviation (MLD), should be used cautiously, if at all, to compute measures of relative IOp.

Our results indicate that IOpI is radically higher in the U.S. than in Denmark, and much more so than previously reported in the literature. A few of those results are the following. When we focus on absolute IOpI and use the MLD as our inequality index, we find that: (a) IOp for individual earnings modulo parental income is 7.1 times (men) and 4.6 times (women) larger in the U.S. than in Denmark, and (b) for men and women pooled, IOp for family income modulo parental income and gender is about 6 times larger in the U.S., while IOp for disposable family income, modulo the same circumstances, is unlikely to be much less than 9 times larger in the U.S. When we use the Gini coefficient as our inequality index, we find that the corresponding ratios in absolute IOp between the two countries are smaller (reflecting the fact that the MLD is much more sensitive to large incomes than the Gini coefficient is) but still very substantial. For earnings, the corresponding U.S.-Denmark ratios in IOp are 2.6 (men) and 2.0 (women), whereas for men and women pooled, the ratio for family income is 2.4 and the ratio for disposable family income is not likely to be much smaller than 2.9. Unlike the MLD, which is unbounded, the Gini has an upper bound of 1, so absolute values are easy to interpret and important to report together with estimates of relative IOpI. In the U.S., absolute IOp for men’s individual earnings modulo parental income is as high as 0.25, which translates into a (lower-bound) estimate of relative IOp of 0.43, that is, at least 43 percent of the inequality in men’s earnings is due to inequality of opportunity; by contrast, the same Gini in Denmark is 0.09, which translates into a lower estimate of relative IOp of 0.27 (and this despite the fact that overall earnings inequality is also much lower in Denmark). Similarly, the Ginis for the IOp of family income module parental income and gender are 0.24 (U.S.) and 0.10 (Denmark), which translate into (lower-bound) estimates of relative IOp of 0.45 and 0.28, respectively.