



# The Evolution of Inequality of Opportunity in Germany: A Machine Learning Approach

Following Roemer (1998) we assume that valuable outcomes individuals obtain are the joint result of their circumstances and the effort they exert. The two components can be separated following a two-step procedure. First, identifying types, i.e. groups of individuals characterized by the same circumstances beyond individual control. Second, measuring the degree of effort exerted by each individual. Inequality of opportunity is then inequality between individuals exerting the same degree of effort but belonging to different types. Roemer's approach is not very frequently adopted by empirical economists because it requires to explicitly model the role of effort. The measurement of effort is a challenging empirical exercise and it has often diverted the focus of economists toward simpler measure of inequality of opportunity. In what follows we show how measures of inequality of opportunity fully consistent with Roemer's approach can be straightforwardly estimated adopting a machine learning approach. This approach uses both regression trees, to identify Romerian types, and polynomial approximation, to estimate the degree of effort exerted by individuals. Our method has two important advantages: first, it allows to relax a number of arbitrary assumptions otherwise necessary to measure effort. Second, opportunity trees can be displayed graphically and are easily interpreted, allowing an intuitive representation of the evolution of inequality of opportunity. We illustrate our approach measuring inequality of opportunity in Germany from 1990 to 2016 taking advantage of information contained in 26 waves of the German Socio-Economic Panel.

## Speaker

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#### Date

17.01.2019 | 14:00 - 15:15

#### Event Location

ZEW – Leibniz-Zentrum für Europäische Wirtschaftsforschung GmbH Mannheim

L 7, 1 68161 Mannheim

#### Room

Heinz König Hall

#### Department

- Labour Markets and Human Resources

#### Category

- ZEW Research Seminar

#### Keywords

- Equal Opportunities
- Social inequality
- Computer-aided method

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