INEQUALITY (≠)

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This 20 hours/10 lectures PhD module combines theoretical and empirical approaches to outline economic and statistics arguments for the analysis of economic inequality.

The objective of the module is to address two key questions, raised by two of the main contributors to modern inequality analysis, that systematically emerge in public economics and in the policy literature: the first question, addressed by Amartya Sen, is "Inequality of what?"; the second question, that stems from the lifelong research of Tony Atkinson, is "What can be done?"

The first part of the module focuses on the first question. We will define and document evidence about different notions of inequality that are intertwined with micro- and macroeconomic analysis: inequality of income, inequality across the life-cycle, inequality across and within groups (such as cohorts, generations, regions, families, genders, skills, human capital). The module will then survey and organize result son the normative underpinnings of measurement and analysis of inequality and related concepts, such as poverty, and social welfare. Empirical issues arising when implementing these models (data and inference) will be also discussed. The presentation will emphasize differences between unidimensional (such as in income or in health) and multidimensional inequality (based on the joint distribution of income *and* health, or inequality of income along the life course) and will investigate related phenomena, such as (ethnic and income) polarization, segregation, mobility, equality of opportunity.

The second part of the module will move from the analysis of distributions to that of redistribution of income or of endowments. The theory of (optimal) redistribution will be reviewed, drawing distinctions between implementation and expected effects on inequality of taxation and of targeted and universal (in kind and in cash) transfers. The module will focus on ex-post evaluation of the distributional impact of policies. We will review the identification of causal treatment effects along the whole distribution of an outcome, as well discuss implementation using distribution regression methods. Selected applications of these methods to the evaluation of the effects of early intervention (i.e. education and human capital reforms, the so-called "pre-distribution") on inequality will be presented.

Outline of the module:

1) **FA – Inequality of what?** This lecture introduces evidence about inequalities related to income (cardinal variable), education (discrete variable) and skills (ordinal variable) across individuals and families, along the lifecycle, and across groups defined by the cohort, the region of residence, the family background, gender. Additional estimates of inequality across generations (intergenerational persistence in income, siblings correlations, mobility matrices, inequality of opportunity measures) will be also discussed. Estimators and outcomes will be presented in this lecture benefitting from a sample (drawn from administrative records) covering 35% of the Swedish population born 1941-1965 for which income observations of parents, siblings and relatives are available for the period 1968-2007.
2) **CZ – Univariate inequality, social welfare and poverty: measurement theory**. The lecture will illustrates the basic principle behind the measurement of inequality and some of the more common criteria adopted in this framework.
3) **CZ – Concepts related to income inequality: polarization, inequality with ordinal variables, dual models.** The analysis will be further developed to illustrate the implications for the adoption of specific models for distributional social evaluations.

4) **FA – Empirical inequality analysis: data issues and testing**. This lecture will outline the most important data sources referenced in applied distributional analysis. The lecture will discuss differences between register, administrative and survey data, and will outline the most important findings (and literature) and difficulties related to some widely used databases. Sampling issues related to measurement and testing of various inequality criteria will be discussed, and the relevant inferential strategies proposed in the literature will be surveyed.
5) **CZ – From unidimensional to multidimensional inequality.** Will be highlighted the main challenges related to the extension of the framework of analysis to multidimensional distribution. This is the case for instance when considering distributions of bundles of different goods or, as is the case for the Human Development Index, when combining evaluations based on the distribution of income, health and education across the population.
6) **FA – Inequality of opportunity: theory and measurement**. Inequality of opportunity, as opposed to inequality of outcomes, draws a distinction between unfair inequality (that deserve a compensation) and just inequalities (such as those stemming from effort choices of healthy habits). This lecture will introduce the normative underpinning of the measurement of inequality of opportunity, a multidimensional phenomenon, and will show how this form of inequality can be measured empirically. The lecture will proceed by presenting data sources and empirical results produced in the recent years, including a discussion about the relation between inequality, mobility and equality of opportunity (represented by the so-called Great Gatsby curve).
7) **CZ – Distribution and redistribution: taxation and benefits.** The main re-distributive policies will be investigated in terms of their equity-efficiency effects.
8) **FA – Related issues: segregation, mobility, spatial inequality.** This lecture will draw on the dissimilarity model (which looks at the extent at which two or more distributions defined over a common support resemble each other) to rationalize within a single setting the measurement of a variety of phenomena such as inequality, segregation and intergenerational mobility. The lecture will also analyze the relation between the distribution of income across individuals and in space. This lecture will show how theoretical arguments can be develop to motivate unambiguous changes in the distribution of a given outcome (ex: transferring money from the rich to the poor reduces inequality), and how these arguments can be transformed into axioms which serve to characterize (partial) orders of distributions.
9) **FA – Causal analysis of intervention: from average to distributional impacts of intervention**. This lecture will discuss the fundamental problem of causal identification and will outline the most interesting theoretical effects for policy evaluation (ATE, CATE, ATT, LATE, ITT and QTE). Identification results for these effects will be presented, with a specific focus on implementation using distributional regression methods (DiD, CiC, RIF, RIF-DiD, Quantile Regression). Reweighing methods for counterfactual analysis will be introduced.
10) **FA – Inequality, human capital and redistribution:** This lecture will present and discuss selected applications of the empirical methods presented in the previous lectures to the analysis of distributional effects of pre-distribution of human capital. A specific focus will be given on evaluation of education expansion policies and pre-school programs.

Detailed references for each topic and lectures material will be provided in class. Students can have a broad overview of frontier research in inequality at the following links:

- http://dse.univr.it/it/index.php/past-events-mainmenu-43 (Lecture material from the Winter School on Inequality and Social Welfare Theory organized by the DSE)
- https://opportunityinsights.org/ (Harvard-based lab on spatial inequality in US)
- https://wid.world/ (PSE-based database about trends in income inequality)
- https://inequality.stanford.edu/ (Stanford-based inequality lab)

Assessment:

Assessments of students will be based on the development of a joint collaborative research project that investigates in details some subjects discussed in the module. The project could consider empirical and theoretical analysis or focus on one of the two perspectives.