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Institut für Ökonometrie und Statistik Forschungsseminar

Tobias Eckernkemper 18.04.2017, 16:00 (s.t.)

Seminargebäude - S12

Efficient Maximum Likelihood Estimation for Income Distributions using Grouped Data

Abstract

We develop a comprehensive framework for maximum likelihood (ML) estimation of income distributions for grouped data. We explicitly account for unknown group boundaries and two data generating processes corresponding to two methods of grouping observations. International income data e.g. provided by the World Bank or WIDER typically consist of income means and relative population shares for several income groups, where the group boundaries are often not reported. Dependent on the type of DGP the likelihood comprises different data information including group means and group boundaries, which have not yet been included in ML inference for grouped data. The incorporation of this data information renders the proposed ML approach more efficient than conventional classical inference on grouped data. A comprehensive simulation experiment shows that the proposed ML framework improves the statistical efficiency of parameter estimates relative to the standard multinomial likelihood and unavailable group boundaries do not result in significant reductions of estimation efficiency. We finally provide an empirical application to a set of countries included in the World Bank database.