Capturing Unobserved Heterogeneity in the Austrian Labor Market Using Finite Mixtures of Markov Chain Models

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Wage mobility in a labor market describes the chances but also the risks of an individual to move between wage categories. Wage mobility is usually measured on an aggregate level for the whole labor market and little work is done to capture unobserved heterogeneity across individuals. The present study tries to obtain some results on unobserved heterogeneity for the Austrian Labor Market.

For each individual, wage mobility is described through a first order Markov chain which is heterogenous across the individuals. We will compare two approaches for capturing unobserved heterogeneity. The first approach is based on using a finite mixture of Markov chains models moving with different speed. In this approach it is assumed that within each hidden group no more heterogeneity is present. This leads to a rather large number of groups which are not easily interpreted. The second approach is based on using finite mixtures of multinomial-Dirichlet distributions. In this approach it is assumed that within each hidden group heterogeneity in wage mobility is still present which may be described through a Dirichlet distribution with an unknown dispersion parameter.

Practical implementation in R is based on combing a Bayesian approach with Monte Carlo simulations based on Markov chains.