Nonparametric estimation of non-exchangeable latent-variable models

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Nonparametric estimation of non-exchangeable latent-variable models*

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Abstract

We propose a two-step method to nonparametrically estimate multivariate models in which the observed outcomes are independent conditional on a discrete latent variable. Applications include microeconometric models with unobserved types of agents, regime-switching models, and models with misclassification error. In the first step, we estimate weights that transform moments of the marginal distribution of the data into moments of the conditional distribution of the data for given values of the latent variable. In the second step, these conditional moments are estimated as weighted sample averages. We illustrate the method by estimating a model of wages with unobserved heterogeneity on PSID data.

JEL codes: C14, C33, C38, J31
Keywords: Latent variable models, unobserved heterogeneity, finite mixtures, hidden Markov models, nonparametric estimation, panel data, wage dynamics

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