



Robust Bayesian Analysis of Linear Static Panel Data Models Using ε -contamination

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We develop a general Bayesian framework for robust Bayesian analysis of linear static panel data models using ε -contamination. A two-step approach is employed to derive the conditional ML-II posterior distribution of the coefficients and individual effects. The ML-II posterior densities are weighted averages of the Bayes estimator under a base prior and the data-dependent empirical Bayes estimator. Two-stage and three stage hierarchy estimators are developed and their finite sample performances are investigated through a series of Monte Carlo experiments. These include standard random effects as well as Mundlak-type, Chamberlain-type and Hausman-Taylor-type models. The simulation results underscore the relatively good performance of the three-stage hierarchy estimator. Within a single theoretical framework, our Bayesian approach encompasses a variety of specifications while conventional methods require separate estimators for each case. We illustrate the performance of our estimator relative to classic panel estimators using data on earnings, crime and international trade (gravity model).