

## Improving IOT updates with Bayesian methodology

Topic: (8.2) Methodological Aspects of Input-Output Analysis (3)

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The paper continues the authors' efforts on developing and application of probabilistic method(s) for updating IO tables, preliminary presented and discussed on previous IIOA conferences. The core of the methodology is Bayesian framework which combines an information from observed data, additional believes (priors), and related uncertainties into posterior joint distribution of input-output table (IOT) coefficients. The framework can be applied to various IOT problems, including updating, disaggregation, evaluation of uncertainties in the data, and addressing incomplete/missing observations. The flexibility of the methodology is partially based on sampling techniques. We apply modern Monte Carlo Markov Chains (MCMC) methods to explore posterior distribution of IOT coefficients.

In the paper with provide multiple tests of the developed techniques and discuss ways of increasing precision and performance of the method. The examples include updating official IOTs for United States, China, Russia, and date from WIOD " database, but based on benchmark years only. The analysis suggests approaches for improving estimates, i.e. reducing prediction error and narrowing confidence intervals estimates, based specification of priors with and without additional information, as well as combination with other (mainstream) updating methods.