

## **A Cycling Method for Constructing Input-Output Table Time Series from Incomplete Data**

Topic: MRIOcasting I: Backcasting and Forecasting

Author: Arne GESCHKE

Co-Authors: Daniel Moran, Keiichiro Kanemoto, Manfred LENZEN, Maria Cecilia Pinto de Moura

There are a number of approaches for constructing time series of input-output tables. Some authors generate an initial estimate for a base year, and then serially estimate tables for subsequent years using the balanced prior-year table as an initial estimate. Others first generate a series of initial estimates for the entire period, and then balance tables in parallel. Current serial methods are affected by sudden leaps in the magnitude of table elements, which occur straight after a period of data unavailability. Current parallel methods require two complete tables for base and final years in the same classification, and therefore do not work under misaligned or incomplete data. We present a new method for constructing input-output table time series that overcomes these problems by averaging over alternate forward and backward sweeps across the time series period. We also solve the problem of hysteresis causing forecast and backcast table estimates to differ.