

## **Bootstrapping input-output uncertainty**

Topic: Input-Output Analysis under Fuzziness, Uncertainty, and Bootstrapping

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The input-output coefficients which are constant in classical input-output model are the core of Input-output model. But in fact, the consumption structure of the same kind of production activity differs in regions and enterprises due to various technical characteristics, organization structure, management level, etc. As a result, in terms of coefficients, it is more reasonable to regard them as uncertain variables than certain values.

This article hopes to introduce the variability of coefficients including input-output ones and Leontief inverse ones and then get the variance of each element in Leontief inverse matrix, which can be done with bootstrap simulation method. Trying to use variance to measure the uncertainty, this paper concludes that the coefficients in input-output table can be calculated as interval estimation rather than point estimation, making the Leontief inverse coefficients and estimation of the output more stable.