Curve shapes and parameters in FLQ regional modelling: some alternative approaches

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In this paper, we propose a novel way of implementing the FLQ (Flegg's location quotient) approach to the regionalization of national input-output tables. Although the FLQ formula often yields the most accurate results of the pure LQ-based methods, the need to specify values of the unknown parameter δ in this formula presents an obstacle to its implementation. A possible solution is to use the FLQ+ method, which employs a modified cross-entropy method, along with a regression model, to estimate values of δ specific to both region and country. Here we develop a fresh approach to the use of the FLQ that substantially simplifies its application, while simultaneously enhancing its performance. As before, sectoral outputs (or employment) are the only regional data required. We focus on how regional size, R, is incorporated in the FLQ formula and simplify the way in which R affects the allowance made for imports from other regions. We call this new formula the reformulated FLQ or RFLQ. We also show how the unknown parameter in this formula can be estimated using readily available data. We test our proposal using the 2005 and 2015 Korean survey-based regional IO datasets. We contrast our estimates with survey-based values and compare results with those from several well-known techniques. Furthermore, we examine two different information scenarios: with and without industry-specific information. The results suggest that one can produce regional IO tables with similar or even better accuracy without using unknown parameters.