The use of weighted GEKS for the calculation of consumer price indices: an experimental application to Italian scanner data

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Abstract

The paper focuses on a generalization of the standard GEKS method, based on Törnqvist indices, used for the compilation of transitive consumer price indices. Unlike the usual application of this method, in its weighted version different weights for different months in the reference period enter into the calculation of indices. In this study, different alternative systems of weights are considered for introducing information on the reliability of the underlying binaries for the weighting matrix. The use of different system of weights, based on the similarity of each couple of months being compared in terms of (a) the share of matching items and (b) the share of the corresponding turnover, proved to have moderate effect on the dynamic of GEKS. However, the evidence suggests that the weighted version of rolling windows GEKS, under different splicing options, tend to be slightly closer to the full window counterpart, as compared to standard GEKS. In other words, the use of weights seems to reduce the impact of the constraint of non-revising the indices. As a further line of research for exploring the different performance of weighted and unweighted GEKS, in the last part of the paper, we present the preliminary results of an analysis, aimed to compare standard and weighted GEKS, which is based on the calculation of a target "true" cost of living index under the hypothesis of Constant Elasticity of Substitution (CES) purchaser preferences. In this analytical setting, our findings based on real scanner data seem to confirm the weighted GEKS tend to perform better than its unweighted version.