A COMPARISON OF REGRESSION COMPOSITE ESTIMATORS IN THE CASE OF THE FINNISH LABOUR FORCE SURVEY

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In this paper, we compare the standard generalised regression (GREG) estimator to the two comparative approach methods of the regression composite (RC) estimators (the Canadian way vs. the Italian way) in a complex rotating panel design. Empirical results are based on data from the Finnish Labour Force Survey (LFS) for the time period from January 2010 to December 2014. The survey is repeated over time with partially overlapping samples. Currently, the Finnish LFS uses GREG estimation and calibration techniques. Estimation for employment and unemployment are based on cross-sectional data. It is expected that estimation can be improved by using the rotating panel property, because employment and unemployment tend to be correlated over time. The RC estimator extends the standard GREG estimator by taking advantage of the temporal correlations. The RC estimator can be implemented within the current LFS estimation system by adding control totals and auxiliary variables to the estimation program. It can be performed by using, with minor modification, standard software for GREG estimation, such as ETOS. It yields a single set of estimation weights and leading to internal consistency of estimates (e.g. Employment + Unemployment = Labour Force). Here we have used the ETOS program for point and variance estimation (Taylor linearisation method). The both RC estimators produced level and change estimates that were usually more efficient than the estimates produced by the current GREG estimator. Also time series are smoother than in GREG.

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