

TESTING FOR AUTO-CALIBRATION WITH LORENZ AND CONCENTRATION CURVES

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Abstract

Following Frees et al. (2011), Denuit et al. (2019, 2021a, 2021b) proposed dominance relations and diagnostic tools based on Lorenz and Concentration curves in order to compare competing estimators of the regression function. This approach turns out to be equivalent to forecast dominance as defined by Ehm et al. (2016) when the estimators under consideration are auto-calibrated (Krüger and Ziegel, 2021). A new characterization of auto-calibration is established, based on the graphs of Lorenz and Concentration curves. This result is exploited to propose an effective testing procedure for auto-calibration. A simulation study is conducted to evaluate its performances and its relevance for practice is demonstrated on an insurance data set.

Keywords: Concentration curve, Lorenz curve, Integrated Concentration Curve (ICC), Area Between the Curves (ABC), Gini coefficient, Auto-calibrated estimators.

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