

LORENZ CURVE, GINI COEFFICIENT, AND TWEEDIE DOMINANCE FOR AUTOCALIBRATED PREDICTORS

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Abstract

Denuit et al. (2019, 2021a, 2021b) proposed diagnostic tools based on concentration curves and associated metrics (ICC and ABC), as well as Tweedie dominance to compare competing models. This is in contrast with professional practice which generally resorts to Lorenz curves and Gini coefficients for that purpose. This talk reconciles both approaches for autocalibrated predictors. Autocalibration is a desirable property, intimately related to the method of marginal totals that predates modern risk classification methods. It can easily be implemented using the practical method proposed by Denuit et al. (2021a), consisting in an extra local regression step. Under autocalibration, we show in this talk that Lorenz curve and concentration curve coincide, that ICC is equivalent to Gini coefficient, and that ABC is zero. The latter property thus offers an easy check for autocalibration.

Keywords: Risk classification, Tweedie distribution family, Concentration curve, ABC, ICC, Convex order.

References

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