Forecasting Mortality Rates via Density Ratio Modeling

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Abstract

A semiparametric approach to modeling and forecasting age-specific mortality in the United States is considered. The approach is based on an extension of a class of semiparametric models to time series. The method combines information from several time series and estimates their predictive distributions conditional on past data. The conditional expectation, the most common predictor, is obtained as a byproduct from the first moment of the predictive distribution. A comparison is made between the semiparametric method and the well known method of Lee and Carter.

Keywords: Age-specific mortality; One-year ahead forecast; Predictive distribution; Tilt; Semiparametric; Data combination.

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