Using Boosting Methods for Rating Migration Analysis

The global financial crisis revealed the necessity to systematically assess the risk involved in a bank's credit portfolio. This stress-testing comprises the dynamics of a counterparty's creditworthiness as crucial input. There are studies that has demonstrated the substantial impact of the macroeconomic environment as well as of issuer-related characteristics on ratings migration. Yet there are challenges from the inflexibility to estimate rating changes under explicit scenarios while taking the heterogeneity of issuers into account. This work proposes to adopt boosting ensembles for a flexible corporate rating migration analysis. The predictive potential of the candidate methods C5.0, XGBoost and Hellinger Distance Decision Trees is systematically evaluated, including a commonly adopted ordinal approach as benchmark model.