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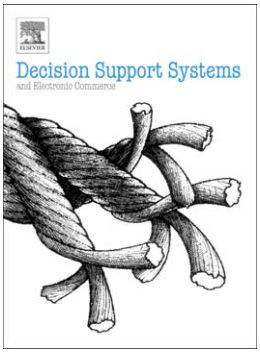

Incorporating sequential information in bankruptcy prediction with predictors based on Markov for discrimination

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Incorporating sequential information in bankruptcy prediction with predictors based on Markov for discrimination

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Abstract

In this paper we make a contribution to the body literature that incorporates a dynamic view on bankruptcy into bankruptcy prediction modelling In addition to using financial ratios measured over multiple time periods, we introduce variables based on the Markov for discrimination (MFD) model. MFD variables are able to extract the sequential information from time-series of financial ratios and concentrate it in one score. Our results obtained from multiple samples of Belgian bankruptcy data show that using data collected from multiple time periods outperforms snap-shot data that contains financial ratios measured at one point in time. In addition, we demonstrate that inclusion of MFD variables in non-ensemble bankruptcy prediction models considered in the study can lead to better classification performance. The latter type of models, despite not achieving the top performance based on metric considered in our study, can still be used by practitioners who prefer simpler, more interpretable models.

Keywords: bankruptcy prediction, Markov chains, Markov for discrimination, time series classification

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