



RESEARCH SEMINAR

EQM Research Seminar

Credit Scoring with Non-parametric Frontier Methods: Overview, New Proposals and Empirical Comparison

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Abstract:

As a simple nonparametric method, Data Envelopment Analysis (DEA) has been widely developed both theoretically and empirically. One of the applications of DEA is in Discriminant Analysis (DA). While serving as a methodology for DA, the characteristic of frontiers derived by DEA methods are barely employed. Only a few contributions can be traced. Moreover, the performance of DEA frontier methods can be even worse than that of traditional parametric DA methods in some cases. This contribution is aimed at proposing novel nonparametric frontier-based methods and show their superior performance over traditional DA methods. Specifically, the discriminant performance is improved by breaking the convexity assumption and discussing overlaps. All proposed methods are compared with the traditional DA methods under various random data sets, as well as an empirical data set on credit scoring. Impressive increases in correct classifications are observed in all our numerical results.

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