

Bankruptcy Prediction of Companies in the Retail-Apparel Industry Using Data Envelopment Analysis

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Abstract

Since 2008, the world has gone through a significant recession. This crisis has prompted many small businesses and large corporations to file for bankruptcy, which has grave global social implications. While the markets recovered much of the lost ground by now, there is still great opportunity to learn about all the possible factors of this recession. We develop a model using DEA to predict the likelihood of failure of US companies in the retail-apparel industry based on information available from annual reports – financial statements and their corresponding Notes, Management’s Discussion and Analysis, and Auditor’s Report. It was hypothesized that variables that reflect managerial decision-making and economic factors would enhance the predictive power of current mathematical models that consider financial data exclusively. This is an effective prediction tool, separating companies with a high risk of bankruptcy from those that were healthy, with a reliable accuracy of 80% – an improvement over the widely-used Altman bankruptcy model having 70%, 58% and 50% accuracy when predicting cases today, from one year back and from two years back, respectively.