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## **Prediction of Corporate Bankruptcy: A Multi-class Approach**

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The purpose of this study is to predict corporate bankruptcy and to determine the attributes affecting bankruptcy prediction in the U.S. publicly listed companies using gradient boosting (GBoosting) machine learning technique. The research data consists of 118,514 firm-year observations for U.S. public companies from 1992 to 2019. The dataset comprised various financial ratios, ownership concentration, executive compensation, market price variables, macroeconomic variables, and audit-related variables. The results of this study show that a multi-class and high dimensional setting using GBoosting provides a more accurate prediction of bankruptcy in terms of accuracy and Type I & Type II error rates compared to previous research. An analysis of relative variable importance indicates that industry variable, ownership concentration/structure, financial ratios, market price variables, and macroeconomic variables (Moody's seasoned AAA bond yield and real GDP growth) have the highest rank among the predictors.