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Financial Ratios and Bankruptcy Predictions: An International Evidence

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Abstract

We study bankruptcy prediction over the international market using Compustat Global database. First, we apply a popular variable selection method, adaptive LASSO (least absolute shrinkage and selection operator), to select a parsimonious set of default predictor variables. When different market infrastructures are presented, our empirical study demonstrates an advantage in forecasting defaults with the adaptively selected default predictor variables. Second, with selected default predictor covariates, we apply the discrete hazard model to examine the performance for the international market with time varying panel data over different prediction horizons. Our empirical study shows that for Japan market, three predictor variables, including *Retained Earning/Total Asset*, *Total Debt/Total Asset* and *Current Liability/Sales* are selected by adaptive-LASSO method. Such selection results are strikingly consistent for different sampling periods over different prediction horizons. The model using those three financial ratios alone demonstrates strong predictability in forecasting corporate default. For Japan market, the model with adaptive-LASSO selected variables shows superior out-of-sample predictive power over the Altman's Z-score model. On the other hand, for some Europe countries including UK, Germany and France, the equity ratio variable, *Equity/Total Liability*, is consistently selected across different prediction horizons, whereas, the rest of selected variables are mixed.

Key words: Default Prediction, Global Market, Hazard Model, Japan Bankruptcy, LASSO, Model Selection.

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