

Credit scoring with macroeconomic variables

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Abstract

Survival analysis can be applied to build models for time of default on debt. In this paper we report an application of survival analysis to model default on a large data set of credit card accounts. We show that survival analysis is competitive for prediction of default in comparison with logistic regression. We explore the hypothesis that probability of default is affected by general conditions in the economy over time. These macroeconomic variables cannot readily be included in logistic regression models. However, survival analysis provides a framework for their inclusion as time-varying covariates. Various macroeconomic variables, such as interest rate and unemployment index, are included in the survival model as time-varying covariates. We show that inclusion of these indicators does affect probability of default and improves predictions of default.