

This paper is forthcoming in Journal of the Royal Statistical Society Series A.

Time Varying and Dynamic Models for Default Risk in Consumer Loans

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Last altered 22.5.09 JNC

Abstract

We review the incorporation of time varying variables into models of the risk of consumer default. Lenders typically have data which is of a panel format. This allows the inclusion of time varying covariates into models of account level default by including them in survival models, panel models or ‘correction factor’ models. The choice depends on the aim of the model and the assumptions that can be plausibly made. At the level of the portfolio, Merton-type models have incorporated macroeconomic and latent variables in mixed (factor) models and Kalman Filter models whilst reduced form approaches include Markov chains and stochastic intensity models. The latter models have mainly been applied to corporate defaults and considerable scope remains for application to consumer loans.

Credit Research Centre Working Paper 09-4

Keywords:, logistic regression, factor models, panel data, Kalman Filter, reduced form models, survival modelling, time varying covariates.

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