

Assessing Credit Risk of Companies with Mean-Reverting Leverage Ratios

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Summary

Empirical findings and theoretical studies suggest that non-financial firms adjust towards time-varying target leverage ratios. This paper studies the performances of the default probabilities (PDs) generated from two structural credit risk models in which a firm's leverage ratio is mean-reverting towards a target ratio. The difference between the two models is that the target ratio is time-dependent or constant. The time-dependent model consistently performs better in terms of discriminatory power of differentiating firms' default risk and capability for predicting their default rates over the period 1996 to 2006. The material difference between the predictive capability of the two models shows that the mean-reverting dynamics of a leverage ratio is a critical factor in modelling credit risk.

The analysis of the capability of the PDs generated from the time-dependent model for predicting defaults of listed companies shows that the model provides appropriate measures of credit risk of listed companies. Because of the development of Basel II, structural credit risk models have been increasingly studied or even employed by the industry. The results in this paper indicate that bank supervisors may find that it is important to have an understanding of the dynamics of leverage ratios and its effect on predicting default rates as compared to those predicted by external credit ratings. The relative performances of the two models also provide evidence to support the existence of a time-varying target leverage ratio. This is consistent with the recent empirical findings.