Default Clustering and Pricing of Commercial Mortgage-Backed Securities

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Abstract

This paper develops and applies an integrated structural-intensity approach with default dependence structure to price CMBS bonds. In this model, the underlying property value is assumed to follow a high-dimensional-Brownian diffusion process. Default on underlying commercial loans is a jump event modeled by a Poisson process, which can capture credit rating information of underlying mortgages. Extensions to allow for default clusters and discrete coupon payments of underlying commercial loans are also included. Sensitivity analyses were also carried out based on a hypothetical CMBS transaction, and our results support the importance of the senior /subordinated structure in CMBS to improve credit rating of CMBS bonds.

Keywords: *Default Cluster, Default Dependence and CMBS*