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Abstract

Credit derivatives pricing models before Basel III ignored losses in market value stemming from higher probability of counterparty default. We propose a general credit derivatives pricing model to evaluate a Credit Default Swap (CDS) with counterparty risk, including the Credit Valuation Adjustment (CVA) in order to optimize the economic capital allocation. We work from the model proposed by Luciano (2003) and the general pricing representation established by Sorensen and Bollier (1994) to provide a model close to the market practice, easy to implement and fitting with Basel III framework. We approach the dependence between counterparty risk and that of the reference entity with a technical tool: the copula, in particular, the mixture one that combines common “extreme” copulas. We study the CDS’s vulnerability in extreme dependence cases. By varying Spearman’s rho, the mixture copula covers a broad spectrum of dependence and ensures closed form prices. We end up with an application on real market data.

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