CDO and HAC

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Abstract

Modelling portfolio credit risk is one of the crucial challenges faced by financial services industry in the last few years. We propose the valuation model of collateralized debt obligations (CDO) based on hierarchical Archimedean copulae (HAC) with up to three parameters, with default intensities calibrated to market data and with a random loss given default that is correlated with default times. The methods presented are used to reproduce the spreads of the iTraxx Europe tranches. Our approach describes the market prices better than the standard pricing procedure based on the Gaussian distribution.

Keywords: CDO; Multivariate distributions; Copulae; Correlation smile; Loss given default.