

Model risk measures for multi-asset European products

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Abstract

We consider two financial assets whose prices are given by X_T and Y_T at a future date $T > 0$ with known distributions. Given a real-valued function $f : \mathbb{R}^2 \rightarrow \mathbb{R}$, we propose a valuation method to price a product paying $Z_T = f(X_T, Y_T)$ at date T , in a market where a certain level of information is also available on the prices of some multi-asset payoffs, such as options on the spread X-Y (as for CMS rates) or on the ratio X/Y (as for FX rates). We model the dependence between the two assets by using a copula, and show how to construct a subfamily of copulas that are compatible with the available market information. Next, we provide bounds on the price of the product Z , and specialize the results in the case of dual binaries.