

Valuation of Interest Rate Spread Options in a Multifactor LIBOR Market Model

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Abstract

Within the multifactor LIBOR market model, the authors examine three types of interest rate spread options: LIBOR vs. LIBOR, LIBOR vs. swap rate, and swap rate vs. swap rate. These financial products are widely traded in the marketplace or are embedded in structured notes, such as CMS range accruals and steepeners. In the first case, the authors show that the drift has an impact on the pricing which differs from the results of previous research. The authors also present a new approach to approximating the distribution of a forward swap rate under the LIBOR market model and then employ it to price CMS spread options. The numerical examples show that the approximate pricing formulas are robustly accurate as compared with Monte Carlo simulation using recent two-year data.