

No-arbitrage conditions for CDS term structures

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Credit Defaults Swaps (CDS) play a central role in post-crisis risk management. They act as source of the risk-neutral default probabilities with which to compute for example counterparty-risk adjustments to derivative prices. In practice, this runs into two types of problems: first, most of a typical bank's counter-parties do not have liquidly quoted CDS contracts written on them, and proxy rates have to be constructed: see for example [1]. Secondly, quoted CDS rates do not always respect Absence-of-Arbitrage. In this talk we will mostly concentrate on the second problem, and discuss simple No-Arbitrage conditions for CDS curves which can be violated in practice [2]. Characterizing those curves which can occur as CDS curves is an interesting mathematical problem, which is relevant for both calibration and proxy-construction. We show that in the continuous-time reduced-modeling framework this can be translated into an inverse problem for ODEs. This talk is based on joint work with Zhongmin Luo (Barclays Investment Bank, London, UK).

Références

- [1] RAYMOND BRUMMELHUIS, ZHONGHMIN LUO, *CDS proxy Construction via Machine Learning Techniques, Part I: Methodology and Results, Part II: Parametrization, Correlation, Benchmarking*, *Journal Financial Data Science* **1**(2), 2019.
- [2] RAYMOND BRUMMELHUIS, ZHONGHMIN LUO, *Arbitrage Opportunities in CDS Term Structure: Theory and Implications*, arXiv:1811.08038, 2018.