

HEDGING OF CREDIT DERIVATIVES IN MODELS WITH TOTALLY UNEXPECTED DEFAULT

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The paper presents an overview of methods of hedging defaultable derivatives under the assumption that there exist tradeable assets with dynamics allowing for elimination of default risk of derivative securities. We investigate hedging strategies in alternative frameworks with different degrees of generality, an abstract semimartingale framework and a more specific Markovian set-up, and we use two alternative approaches.

On the one hand, we use the stochastic calculus approach in order to establish rather abstract characterization results for hedgeable contingent claims in a fairly general set-up. We subsequently apply these results to derive closed-form solutions for prices and replicating strategies in particular models.

On the other hand, we also examine the PDE approach in a Markovian setting. In this method, the arbitrage price and the hedging strategy for an attainable contingent claim are described in terms of solutions of a pair of coupled pricing PDEs. For some standard examples of defaultable claims, we provide explicit formulas for arbitrage prices and the associated hedging strategies.