Explicit formula for pricing CLNs with counterparty risk under reduced-form framework

by

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Abstract

A credit-linked note (CLN) is a type of credit derivatives, constructed with a bond and an embedded credit default swap, which allows the issuer to transfer a specific credit risk to credit investors. In this paper, we model CLNs with and without counterparty risk in the reduced-form framework. For CLNs with counterparty risk, the risk mainly comes from the so called “wrong way risk”, caused by the positive correlation between the issuer of CLNs and reference assets. Assuming the interest rate follows CIR model and the default events mainly depend on the interest rate, we model the positive correlation between issuers and reference assets. Explicit formulas for value functions are obtained through PDE approach. In addition, counterparty valuation adjustment (CVA) and the dependence on related parameters are also investigated.

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*** ALL ARE WELCOME ***