

A Quadratic Gaussian Reduced Form Model

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This paper considers the pricing of credit sensitive securities under a two country reduced form model. This framework enables us to consider the pricing of securities that are subject to quanto risk, where payoffs are denominated in a currency other than the currency of the underlying asset determining the payoff amount. We consider a multifactor model where the domestic and foreign interest rates as well as the intensity of default are modelled by quadratic Gaussian processes. We show how to calibrate to the term structure of interest rates and to credit default swaps. When the number of correlated factors is less or equal to two, we provide analytic formulas for the price of a credit default swap option and an approximation when a higher number of correlated factors are involved.