Pricing a Swap on Italian Spark Spread in the Presence of Counterparty Credit Risk

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Extended Abstract

The liberalization of energy markets led to the development of new price risk management strategies as well as to the increase of energy trading opportunities for market players. For years researchers and practitioners have been defining and analyzing relationships among commodity prices, and they have been focusing on the study of specific price spreads by observing prices’ behaviour. In this paper, we investigate the existing relationship between the Italian electricity forward price and the Dutch TTF natural gas forward price, in order to identify appropriate pricing models for the spread between the two prices. In energy markets, this spread is referred to as spark spread. It mimics financially the generation costs of electricity for a specific facility because it involves the simultaneous purchase of natural gas and the sale of electricity. Furthermore, we aim at evaluating financial derivatives that offer utilities, generators, marketers, and market makers the ability to lock in a margin on current and future electricity generation. In particular, we focus on studying the cash flow structure of a spark spread swap and we use a reduced form modelling approach to assess impact of counterparty risk in pricing formulas.

Keywords
Counterparty risk, energy swap, spark spread, reduced form models.

References


