Pricing and Hedging Gap Risk

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Abstract

We analyze a new class of exotic equity derivatives called gap options or gap risk swaps. These products are designed by major banks to sell off the risk of rapid downside moves, called gaps, in the price of the underlying. We show that to price and manage gap options, jumps must necessarily be included into the model, and present explicit pricing and hedging formulas in the single asset and multi-asset case. The effect of stochastic volatility is also analyzed.

Keywords: Gap risk, gap option, exponential Levy model, quadratic hedging, Levy copula

JEL Classification: G13

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