

**Eriksson, Marcus; Lempa, Jukka; Kastberg Nilssen, Trygve**  
**Swing options in commodity markets: a multidimensional Lévy diffusion model.** (English)

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The authors propose and analyze a model for the valuation of a swing option written on multiple commodities. The commodity spot prices are driven by multiple factors. The factors are modeled as diffusion processes driven by a multidimensional Lévy process. The valuation model is formulated as a dynamic programming problem in continuous time.

The authors derive some general properties of the model and study the solution by analyzing the associated HJB equation.

The results are illustrated numerically in three cases: Ornstein-Uhlenbeck factor dynamics with Brownian driver, Ornstein-Uhlenbeck factor dynamics driven by a sum of a Brownian motion and a compound Poisson process, and a two-factor model based on a Lévy process.

Reviewer: Pavel Stoyanov (Sofia)

#### MSC:

91G20 Derivative securities (option pricing, hedging, etc.)  
60G51 Processes with independent increments; Lévy processes  
60J60 Diffusion processes  
90C39 Dynamic programming  
91G60 Numerical methods (including Monte Carlo methods)

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#### Keywords:

swing option; flexible load contract; dynamic programming problem; multi-factor model; Lévy diffusion; HJB equation; finite difference method

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