On exceptional properties of f-divergence minimal martingale measures for exponential Levy models

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Abstract

We study such important properties of f-divergence minimal martingale measure as Levy preservation property, scaling property, invariance in time property for exponential Levy models. We give some useful decomposition for f-divergence minimal martingale measures and we answer on the question which form should have f to ensure mentioned properties. We show that f is not necessarily common f-divergence. For common f-divergences, i.e. functions verifying $f''(x) = ax^\gamma$, $a > 0$, $\gamma \in \mathbb{R}$, we give necessary and sufficient conditions for existence of f-divergence minimal martingale measure. As an application we give explicit formulas for utility maximising strategies of exponential Levy models.

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