Two multivariate models for asset returns are introduced. Both generalize popular univariate models without altering their marginal laws; a very convenient feature e.g. for a sequential calibration of the model's parameters to market quotes. The first is a double exponential jump-diffusion model with constant volatility as presented in the univariate case by [Kou, 2002]. The second is a generalization of the stochastic volatility model of Gamma-Ornstein-Uhlenbeck type as first presented by [Barndorff-Nielsen and Shephard, 2001]. Univariate processes of these kinds are driven by a Brownian motion as well as a compound Poisson process. Unlike other existing multivariate extensions of these univariate models, one important advantage of the presented approach is to keep the parameters that govern the dependence structure between the assets separated from the parameters that determine the marginal distributions of the assets. This is achieved by introducing dependence to the univariate compound Poisson processes by means of a bespoke common stochastic time-change.

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