

SUPERPOSITION OF COGARCH PROCESSES

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We suggest three different superpositions of COGARCH (supCOGARCH) volatility processes driven by Lévy processes or Lévy bases. We present their second-order properties, their jump behaviour, and tail-behaviour. We also define corresponding price processes and study their properties.

We see that the supCOGARCH models allow for more flexible autocovariance structures than the COGARCH. Moreover, other than the COGARCH model and other financial volatility models, the supCOGARCH processes do not exhibit a deterministic relationship between jumps of price and volatility processes. It is even possible to define a supCOGARCH model, where not all jumps in the volatility entail a price jump.