Quantitative Finance > Risk Management

Tracking errors from discrete hedging in exponential Lévy models

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We analyze the errors arising from discrete readjustment of the hedging portfolio when hedging options in exponential Levy models, and establish the rate at which the expected squared error goes to zero when the readjustment frequency increases. We compare the quadratic hedging strategy with the common market practice of delta hedging, and show that for discontinuous option pay-offs the latter strategy may suffer from very large discretization errors. For options with discontinuous pay-offs, the convergence rate depends on the underlying Levy process, and we give an explicit relation between the rate and the Blumenthal-Getoor index of the process.

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