

Optimal closing of a pair trade with a model containing jumps

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A pair trade is a portfolio consisting of a long position in one asset and a short position in another, and it is a widely applied investment strategy in the financial industry. Recently, Ekström, Lindberg and Tysk studied the problem of optimally closing a pair trading strategy when the difference of the two assets is modelled by an Ornstein-Uhlenbeck process. In this paper we study the same problem, but the model is generalized to also include jumps. More precisely we assume that the above difference is an Ornstein-Uhlenbeck type process, driven by a Lévy process of finite activity. We prove a verification theorem and analyze a numerical method for the associated free boundary problem. We prove rigorous error estimates, which are used to draw some conclusions from numerical simulations.

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