

Improved Portfolio Policies under Partial Information

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It is convenient to use continuous-time models to approximate the discrete-time trading on the market, since these models often allow us to derive optimal trading strategies quite explicitly. But if we consider models where the drift of the stock returns is not constant, these strategies can lead to extreme long and short positions which can result in bankruptcy if we only trade in discrete time.

In a continuous-time hidden Markov model for the stock returns and for an investor who wishes to maximize expected utility of terminal wealth, we will compare different constraints and model reformulations which lead to a better performance of the optimal continuous-time strategies when applied to market data: E.g. using very risk-averse utility functions, non-constant volatility models, Levy-noise, convex constraints (no short selling), or risk constraints like e.g. bounded shortfall risk.

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