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"A Stochastic Portfolio Optimization Model with Bounded Memory"

Abstract: We consider a portfolio management problem of Merton's type in which the risky asset return is related to the return history. The problem is modeled by a stochastic system with delay. The investor's goal is to choose the investment control as well as the consumption control to maximize his total expected, discounted utility. Due to the effect of the delay, the associated HJB equation is usually in an infinite dimensional space. Under certain conditions, we reduce the HJB equation to an equation in a finite dimensional space. In particular, we derive the explicit solutions for some situations.

This is a joint work with Harry Chang and Yipeng Yang.