Optimal Portfolio Allocation of Commodity Related Assets in Illiquid Markets and a Forward-backward Algorithm to Solve the Stochastic Control Problem

Stephan Ludwig
Stanford University

Abstract

In the first part of the talk, an algorithm for solving continuous-time stochastic optimal control problems is presented. The numerical scheme is based on the stochastic maximum principle (SMP) as an alternative to the widely studied dynamic programming principle (DPP). We show possible performance advantages of the algorithm in the case of feedback control. In the second part, an investment-consumption problem with convex transaction costs and optional stochastic returns is presented. The model is a simplified approach for the investment in a portfolio of real options. We show numerical results that, on one hand, are consistent with the well-known investment-consumption theory. On the other hand, the investment strategy may seem counter intuitive.

Tuesday, December 11, 2012
Sherrerd Hall 101
4:30 PM