Utility Maximization with Floor Constraint

Abstract: After reviewing the problem and related works, a dual approach to the problem is introduced in a Markovian SDE model driven by Brownian motions. The free-boundary problem associated with the differential of the dual HJB equation plays an important role. The dual optimizer is constructed by the solution to an SDE with (nonsticky) reflection at the free-boundary. Using it, the solution to the primal utility maximization problem is recovered. The talk is based on a joint with Salvatore Federico (Univ. of Milano) and Fausto Gozzi (LUISS, Roma).