

COMPUTATION OF OPTIMAL PORTFOLIO STRATEGIES UNDER PARTIAL
INFORMATION WITH EXPERT OPINIONS

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The problem of finding an optimal portfolio strategy for utility maximizing investors in a financial market can be solved by means of dynamic programming equations. This talk investigates the numerical treatment of these equations for the case of power utility. The underlying model is a specification of the model presented in the companion talk by R. Wunderlich. Here we model the drift by a non-observable continuous-time Markov chain with only two states. Then the system of governing filter equations can be reduced to a single equation. As a consequence the dynamic programming equation has only one spatial variable and appears as a nonlinear parabolic integro-differential equation where the integral term models the influence of the expert opinions. The difficulty of the discretization is the combination of discretization of the diffusion part and integral part. The integral part appears as a parametric integral with a nonlinear translation of the integrands argument. Here we use an explicit difference scheme and methods of numerical integration. The talk concludes with some numerical results for the computed strategies and gives a financial interpretation of the information gain due to the expert opinions.