

# Robust control of consumption-investment strategies with logarithmic utility and time-consistent penalties

Alexander Schied, TU Berlin

**Abstract:** We propose a stochastic control approach to the dynamic maximization of robust utility functionals that are defined in terms of logarithmic utility and a dynamically consistent convex risk measure. The underlying market is modeled by a diffusion process whose coefficients are driven by an external stochastic factor process. Our main results give conditions on the minimal penalty function of the robust utility functional under which the value function of our problem can be identified with the unique classical solution of a quasilinear PDE within a class of functions satisfying certain growth conditions.