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Title: Deterministic Income under a Stochastic Interest Rate

Abstract:

We consider an individual or household endowed with an initial capital
and a deterministic income.
Instead of a constant discounting/preference rate, a geometric Brownian
motion as a preference function and an Ornstein-Uhlenbeck process as a
discounting rate are taken into consideration.
It is assumed that the primal interest of the economic agent is to
maximise the cumulated value of expected discounted consumption.
In a way, the considered model is dual to the well-known dividend
maximisation problem where the surplus process of an insurance entity is
described by a Brownian motion and the preference rate is given by a
positive constant.

Our main result is a characterization of the value function and of the
optimal strategy.