1 Abstract

The continuous time problem of jointly optimizing a portfolio and the rate at which it is consumed was solved by Merton in the 1970s. For most common utility functions, for simple specifications of asset price processes, and with no transaction costs the resulting nonlinear partial differential equation can be solved in closed form. However, the standard utility formulation does not distinguish between increasing and decreasing consumption patterns. This is counter to our intuition about human behaviour. Economists have long recognized this and account for it using so-called ”habit formation” utility functions, in which the current consumption rate is compared to some long-run average rate. If this is specified in the usual form of ”addictive” habit formation some close form solutions can be obtained. In this talk we present a different formulation of the problem resulting in a different nonlinear PDE together with some intuition-building numerical solutions.