

In search of an optimal boundary condition: dynamic programming vs optimal control

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A continuous-time intertemporal objective function with the state variable in the instantaneous utility function is maximized on a finite support for a state variable (called "psychological stress"). There is one constraint consisting of a stochastic differential equation for the state variable and another constraint imposing a discrete reduction of the state variable at the upper bound of the support ("stress reduction via an emotional outburst"). The maximization problem is solved by guess and verify for the stochastic and deterministic case and by optimal control theory for the deterministic case. The solutions are compared analytically and numerically.

Note of the author:

Ökonomisch-psychologischer Hintergrund ist mein Paper "Stress and Coping",
http://waelde.com/pdf/Waelde_Stress_and_Coping.pdf

Es geht im Vortrag allerdings ausschließlich um das Maximierungsproblem.