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Markus Mocha, Nicholas Westray

**BSDE** Approach

(Submitted on 1 Jul 2011)

This article studies the sensitivity of the power utility maximization problem with respect to the investor's relative risk aversion, the statistical probability measure, the investment constraints and the market price of risk. We extend previous descriptions of the dual domain then exploit the link between the constrained utility maximization problem and continuous semimartingale quadratic BSDEs to reduce questions on sensitivity to results on stability for such equations. This then allows us to prove appropriate convergence of the primal and dual optimizers in the semimartingale topology.

The Stability of the Constrained

**Utility Maximization Problem - A** 

Comments: 30 pages Subjects: **Optimization and Control (math.OC)**; Probability (math.PR); Portfolio Management (q-fin.PM) MSC classes: 60H30, 93D99, 91B28 Cite as: arXiv:1107.0190v1 [math.OC]

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