1077-91-1728 **Maxim Bichuch** and **Stephan Sturm*** (ssturm@princeton.edu), 116 Sherrerd Hall, Princeton University, Princeton, NJ 08544. *Portfolio Optimization under Convex Incentive Schemes.*

We consider the utility maximization problem of terminal wealth from the point of view of a portfolio manager paid by an incentive scheme given as a convex function g of the terminal wealth. The manager's own utility function U is assumed to be smooth and strictly concave, however the resulting utility function $U \circ g$ fails to be concave. As a consequence, this problem does not fit into the classical portfolio optimization theory. Using duality theory, we prove wealth-independent existence and uniqueness of the optimal wealth in general (incomplete) semimartingale markets as long as the unique optimizer of the dual problem has no atom with respect to the Lebesgue measure. In many cases, this fact is independent of the incentive scheme and depends only on the structure of the set of equivalent local martingale measures. As example we discuss stochastic volatility models and show that existence and uniqueness of an optimizer are guaranteed as long as the market price of risk satisfies a certain (Malliavin-)smoothness condition. We provide also a detailed analysis of the case when this criterium fails, leading to optimization problems whose solvability by duality methods depends on the initial wealth of the investor. (Received September 21, 2011)