1015-90-197 **D Kramkov** (kramkov@andrew.cmu.edu), Department of Mathematics, Carnegie Mellon University, 5000 Forbes Ave, Pittsburgh, PA 15213, and **M Sirbu*** (sirbu@math.columbia.edu), Department of Mathematics, Columbia University, 2990 Broadway, MC 4447, New York, NY 10027. *On the two-times differentiability of the value functions in the problem of optimal investment in incomplete markets.*

We study the two-times differentiability of the value functions to the primal and dual optimization problems that appear in the setting of expected utility maximization in incomplete markets. We also study the differentiability of the optimal solutions to these problems with respect to their initial values. We show that the key conditions for the results to hold true are that the relative risk-aversion coefficient of the utility function is uniformly bounded away from zero and infinity and that the prices of traded securities are sigma-bounded under the numeraire given by the optimal wealth process. (Received February 05, 2006)