

No Arbitrage Without Semimartingales

Robert A. Jarrow*, and Philip Protter † and Hasanjan Sayit ‡

Abstract

We show that with suitable restrictions on allowable trading strategies, one has no arbitrage in settings where the traditional theory would admit arbitrage possibilities. In particular, price processes that are not semimartingales are possible in our setting, for example fractional Brownian motion.

*Johnson Graduate School of Management, Cornell University, Ithaca, NY, 14853.

†ORIE – 219 Rhodes Hall, Cornell University, Ithaca, NY 14853-3801 USA

‡Mathematics Dept., Worcester Polytechnic Institute, Worcester, MA 01609-2280