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Scott P Robertson* (scottrob@andrew.cmu.edu), Carnegie Mellon University, Department of Mathematical Sciences, Wean Hall 6113, Pittsburgh, PA 15213. *Optimal Investment for Large Positions in Contingent Claims, A Gartner-Ellis Approach.*

Motivated by the large notional amounts outstanding in over-the-counter derivatives markets, we consider the optimal investment problem, for an investor holding a large position in a non-traded asset, in a general incomplete semi-martingale market. In particular we are interested in identifying limiting indifference prices, optimal position sizes and hedging strategies in a sequence of incomplete markets which is asymptotically complete in that hedging errors vanish. Drawing connections with the classical Gartner-Ellis theorem from Large Deviations, we show that if indifference prices converge when positions are taken at a certain "large deviations" rate, then optimal position sizes become large at precisely this rate as well. Furthermore, that prices converge along a given rate is the typical situation in asymptotically complete markets: this is shown via numerous examples, including those with vanishing transactions costs, trading constraints, and unhedgeable shock correlations. Lastly we show that when taking position size into account, it is in general not true that limiting indifference prices coincide with the unique arbitrage free price in the limiting model. This is joint work with Constantinos Spiliopoulos and Michalis Anthropelos. (Received August 11, 2015)