1038-90-102   **Jungmin Choi*** (`choi@math.fsu.edu`), 208 Love Building, 1017 Academic Way, Florida State
University, Tallahassee, FL 32306-4510. *Partial hedging in financial markets with a large agent.*

We investigate the partial hedging problem in financial markets with a large agent. We develop a stochastic differential equation with a single large agent parameter to model such a market. We focus on minimizing the expected value of the size of the shortfall in the market with a large agent. A Bellman type partial differential equation is derived for the shortfall function, and the Legendre transform is used to consider the dual shortfall function. An asymptotic analysis leads us to conclude that the shortfall function (expected loss) increases when there is a large agent, which means that one would need more capital to hedge away risk in the market with a large agent. This asymptotic analysis is confirmed by performing Monte Carlo simulations. (Received February 01, 2008)