Insider Trading with Incomplete Information

René Caldentey
Stern School of Business, New York University,
44 West Fourth Street, Suite 8-77, New York, NY 10012.

Ennio Stacchetti
Department of Economics, New York University,
19 West Fourth Street, 6th floor, New York, NY 10012.

Abstract

In this paper we study a continuous-time model of strategic trading with asymmetric information of an asset whose fundamental value is not observable by the market. The formulation builds upon the insider trading model introduced by Kyle (1985) with three important differences: (a) the fundamental value of the asset has a Bernoulli distribution, (b) this value is publicly revealed at a random (unpredictable) time and (c) the market maker is not certain that there is an insider. Assuming the market maker can shut down the market when the potential losses of liquidity traders are unbounded, we are able to explicitly construct a Markov equilibrium. In equilibrium, the market maker continuously update his beliefs about the value of the asset, but his beliefs about the presence of the insider remain constant.