The latency advantage of high frequency traders (joint with Mehmet Saglam)

Abstract: We study the consequences for the price process of a market structure where a strategic trader enjoys a speed or latency advantage over other traders. The high frequency trader receives an imperfect signal regarding the future order flow and thanks to his latency advantage is able to revise his orders at a rate faster than that of other traders. We determine the optimal trading strategy of the high frequency trader and the price dynamics that result. We show in particular that the market will experience a high rate of order placement and a high rate of order cancellation, which conforms to what is observed in practice.