D I S S E R T A T I O N P R O P O S A L

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“Essays on high-frequency trading and speed bump”

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High-frequency trading has been the subject of intense public focus and debate. The artificial latency (“speed bump”) designed by Investors Exchange to address some of the issues of HFT is no less controversial. In this dissertation, we are interested in studying how IEX’s speed bump affects investors’ trading behavior.

This research consists of two parts. In the theory part, we try to build a model where investors, high-frequency arbitragers and market makers trade on two exchanges, one of which has a speed bump that prevents front-running. We compare price discovery, liquidity and market quality before and after the introduction of a speed bump. We also study how each market participant’s trading strategy and profitability change. Information production, communication between market makers, as well as venue choice of uninformed investors have impact on both market structure and investors’ behavior.

In the empirical part, we study whether the impact of a speed bump varies under different market conditions and/or for different types of stocks. The model we build has several preliminary results. When a speed bump is introduced, how investors’ behavior changes depends on many things (volatility, direction of order-flow, market sentiment, etc.). We plan to use IEX data to test those implications. Detailed analysis would help shape a much clearer view of not only the speed bump, but of the stock market trading landscape as well.