

Propositions attached to the thesis
“Price Discovery and Liquidity in the High Frequency World”

by

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- I The amount of price discovery, i.e. the pricing of new information into financial securities, varies across the trading day and across the multiple stock exchanges a security is trading simultaneously. (*Chapter 2*)
- II Kalman filtering methods, coupled with Maximum Likelihood estimation, provide a reliable framework to estimate time-varying parameters of intraday trading processes, such as the amount of price changes generated by new public information, private information signals, executions of market orders of different trade sizes and microstructure noise. (*Chapters 2 and 3*)
- III The clustering of trading activity to certain parts of the day generates a liquidity externality where market participants can trade at more informative prices and with less transaction costs. This benefits market participants with discretion about their trading times. However, the resulting illiquidity externality for the rest of the day prevents the full utilization of electronic communication networks (ECNs), which, unlike the trading pits, remain open for trading during almost the whole day. (*Chapter 3*)
- IV ECNs and better order execution technologies can deal with the negative effects of market illiquidity. In particular, during illiquid times trades can cause significant price movements, which amplify trading costs. ECNs enable the use of smart execution algorithms, which can reduce the price effect of market orders by executing them according to an optimization strategy and usually in a series of small batches. (*Chapter 3*)
- V The predatory high-frequency trading strategy of momentum ignition is based on triggering a transitory price trend using trade activity. We find evidence for its frequent use from late 2011 on, possibly as a response to the increasing competition among and lower profits of high-frequency trading firms. (*Chapter 5*)

- VI Complaining was not a smart response to deal with the technological challenges of the financial markets during the 19th century. Hiring a telegraph operator was. As is hiring a market microstructure specialist today.
- VII Unconditional basic income policies will be useful to address the increasing unemployment problems of the upcoming decades, fueled by technological shifts and sluggish aggregate demand.
- VIII Gamification, i.e. the application of game elements and digital design to motivate people to achieve a goal, presents a valuable method to solve complex problems, especially in the forthcoming economy with more leisure time due to higher unemployment and lower labor participation rates.
- IX We are living in the most peaceful time of our species' existence, although we often tend to forget it.
- X The transition to a post-meat world may be next big revolution. It will increase our longevity, alleviate the strain of healthcare costs on our social security systems and curb climate change.
- XI It is no wonder that we have not encountered any extraterrestrial life yet, given how early in the history of our universe we are living in. It is better to enjoy the uniqueness of our existence is and what a long time we have ahead of us rather than bemoaning about our intergalactic loneliness.