Occasional Paper No. 50: Quantifying the High-Frequency Trading 'Arms Race': A new methodology and estimates

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The authors use stock exchange message data to quantify the negative aspect of high-frequency trading, known as 'latency arbitrage.' The key difference between message data and widely-familiar limit order book data is that message data contain attempts to trade or cancel that fail.

Occasional Paper No.50 (PDF)

Appendix (PDF)

Addendum to Occasional Paper No.50 (PDF)

Summary

The authors use stock exchange message data to quantify the negative aspect of high-frequency trading, known as "latency arbitrage." The main results show:

- races are frequent, fast and worth only small amounts per race
- a large proportion of daily trading volume is in races
- race participation is concentrated
- in aggregate, these small races make up a meaningful proportion of price impact
- in aggregate, these small races add up to meaningful harm to liquidity

- in aggregate, these small races add up to a meaningful total ‘size of the prize’
- The paper finds that while there is only a small detriment per transaction as a result, it adds up to a 17% reduction in the cost of liquidity and $5bn a year in tax on trading volume.

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