The Trading Arms Race: 
Recent evolution of the E-mini -- SPY latency arbitrage

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“And so these men
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right
And all were in the wrong.”

John Godfrey Saxe (1816–1887).

"Blind monks examining an elephant", an ukiyo-e print by Hanabusa Itcho (1652–1724).
New Microwave links in the FCC database (2011-2014)

Mile Marker #121 on I-88
Aurora, IL, Sep. 2013
Fig 1. -- Interpretation:
1. Correlation breaks down
2. Continuous time markets don’t actually work
Data from April 2010 thru Aug 2012 (577 days total).

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August 9th 2011 -- Highest recorded E-mini FIX filesize

Flash Crash
Aggregated from 14,078,656 price-changing ES trades over 577 trading days 4/2010 thru 8/2012

This peak represents SPY trading influencing CME

Negative Lags relative to CME

moments when price-changing Emini trades occur

speed of light in vacuum limit on arrival in NJ

POSITIVE LAGS relative to CME

This peak represents CME trading influencing SPY

Can’t mark to mid. Correlation is very strong when one looks at CME price-changing trades.
• Existence of large spread and large liquidity on the E-mini drives the race.
• Equity HFT MM profits are collapsing (declining volumes and infrastructure expense).
• Consider implementing: Change the CME minimum spread from $12.50 to $5.00.
• Slightly more drastic proposal: Implement a $0.001 minimum spread on equities, and a $0.50 minimum spread at the CME.