

High-Frequency Cross-Market Trading: Model Free Measurement and Applications

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Federal Reserve Board

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Room Benvenuti and live Zoom
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We propose simple model-free measures of high-speed interlinkages in modern electronic markets directly employing high-precision time stamps for sharp identification of prevailing low-latency lead-lag relationships while avoiding reliance on noisy tick-by-tick return series. The measures provide a computationally advantageous complement to existing cointegration-based approaches for gauging price discovery and further allow studying low-latency interlinkages between liquidity provision and trading activity across fragmented markets. As an empirical illustration to U.S. cash and futures markets, we show that high-speed cross-market trading is an important driver of price discovery, fleeting liquidity and volatility transmission both in normal times and episodes of market stress.