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Does high-frequency trading increase systemic risk?☆

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Abstract

In 2010, the Tokyo Stock Exchange, the largest stock exchange headquartered outside of the United States, introduced a new trading platform, Arrowhead. This platform was designed to reduce latency and increase co-located, high-frequency quoting and trading (HFQ) from zero to 36% of trading volume. During tail events representing extreme market conditions, low-latency correlated HFQ may lead to systemic risks such as flash crashes, which has not been sufficiently addressed in the literature. In this paper, our study provides a framework to assess whether HFQ increases systemic risks and point to the need for incorporating correlations and CoVaR methods in regulating these risks through circuit breakers and other regulations.

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