

High-Frequency Trading and Market Stability*

Dion Bongaerts[†] and Mark Van Achter[‡]

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Abstract

In recent years, technological innovations and changes in financial regulation induced a new set of liquidity providers to arise on financial markets: high-frequency traders (HFTs). We investigate how HFTs compete for incoming uninformed and informed order flow with low-frequency traders (LFTs), such as traditional market makers or institutional investors. We show that the emergence of HFTs puts pressure on the profits LFTs generate, and drives (a substantial fraction of) the LFTs out of the market. With little or no informed trading activity, liquidity and price discovery improve with more and/or faster HFTs. Yet, when suspicions of informed trading are high, HFTs shun the market. Consequently, LFTs fear adverse selection and withdraw from the market altogether. In the absence of LFTs, liquidity will then be low, price discovery slow, and market freezes may arise. Our model also provides guidance on how financial markets should be optimally organized/regulated in the presence of HFTs.

JEL Codes: D53, G01, G10, G18

Keywords: High-Frequency Trading, Limit Order Book, Market Freeze, Market Stability

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[†]Rotterdam School of Management, Erasmus University, Department of Finance, Burgemeester Oudlaan 50, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands. E-mail: dbongaerts@rsm.nl.

[‡]Rotterdam School of Management, Erasmus University, Department of Finance, Burgemeester Oudlaan 50, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands. E-mail: mvanachter@rsm.nl.