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High frequency trading and the *new market* makers[☆]

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Abstract

This paper characterizes the trading strategy of a large high frequency trader (HFT). The HFT incurs a loss on its inventory but earns a profit on the bid–ask spread. Sharpe ratio calculations show that performance is very sensitive to cost of capital assumptions. The HFT employs a cross-market strategy as half of its trades materialize on the incumbent market and the other half on a small, high-growth entrant market. Its trade participation rate in these markets is 8.1% and 64.4%, respectively. In both markets, four out of five of its trades are passive i.e., its price quote was consumed by others.

JEL classification: G10

Keywords: High frequency trading; Market maker; Multiple markets

Equity trading fragmented substantially in the first decade of the twenty-first century. Fig. 1 illustrates how NYSE market share in its listed stocks was still 80% in 2005 and declined to 25% in 2010. In Europe, equity trading started fragmenting somewhat later as, for example, the

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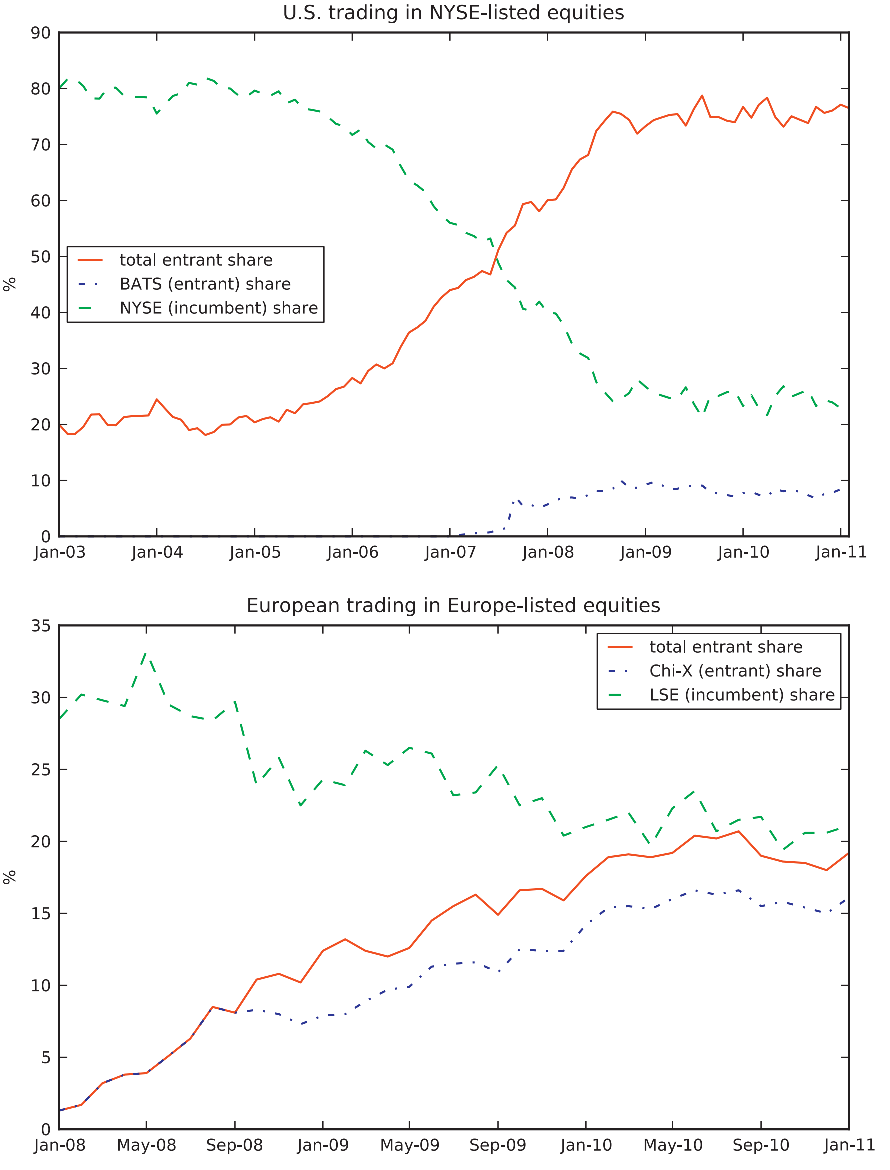

Fig. 1. Market fragmentation Europe and U.S. This figure illustrates the recent fragmentation in equity markets. The top graph plots incumbent and entrant market share in NYSE-listed stocks. The bottom graph does the same for European listed stocks. *Source*: Barclays Capital and Federation of European Exchanges.

London Stock Exchange market share dropped from 30% at the start of 2008 to about 20% at the end of 2010. New, high-tech entrant markets, such as BATS in the U.S. and Chi-X in Europe, captured a substantial part of the market share lost by incumbents. In 2011, Chi-X became the largest European equity market according to trade statistics published by the Federation of European Exchanges.