



# Trading places: Price leadership and the competition for order flow

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## ABSTRACT

I investigate the role of price leadership and informed trading in the competition for order flow between high-tech entrant trading venues and established national trading venues. An analysis of BATS Chi-X Europe (Chi-X), a high-tech entrant, and London Stock Exchange (LSE), an established national exchange, suggests that Chi-X's price leadership in the London market is critical to its acquisition of market share at LSE's expense. Intraday variations in price leadership, driven by informed trading, liquidity constraints and institutional trading arrangements are, however inconsistent with the theoretical liquidity–efficiency link. Asymmetric effects of dark and algorithmic trading across the platforms are also reported.

*“...the UK wholesale equity market is dominated by electronic computer-based trading at ultra-fast speeds. The value of information and the speed of order execution remain consistent drivers of market innovation”*

U.K.'s Financial Conduct Authority (Thematic Review TR16/5)

## 1. Introduction

New trading venues must compete with established national platforms for market share in order to survive. Trading places in the market pecking order with established national platforms is the driving principle for most new venues. History suggests that prior to the advent of large scale electronic trading, realising this ambition in European markets proved quite impossible, as national exchanges held sway for decades with no meaningful challenges to their dominance. Established exchanges hold the advantage of being able to draw on high levels of liquidity via their existing networks, thereby reducing search costs for counterparties trading on their own platforms. According to Pagan (1989), given that search costs could be very expensive in order-driven markets, this extent of power constituted a high entry barrier to entrants. In the electronic trading age, however, search costs are rather insignificant because investors can survey a large cross section of trading venues from one location via an internet link-up. Nevertheless, not all investors have access to the technology needed to negate the impact of the search costs at the speed required to remain competitive, thus entrant venues may still struggle to attract retail investor volumes (see Foucault and Menkveld, 2008). Menkveld (2013) argues that high frequency traders (HFTs), who trade at very high speeds with computer algorithms, could play an important role in ensuring that entrant markets compete favourably with established markets. Specifically, HFTs could generate competitive quotes, which new venues require in order to succeed, making them dominant players in entrant high-tech markets.

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BATS Chi-X Europe (hereinafter referred to as Chi-X) is an entrant high-tech market that has successfully challenged established European national exchanges for order flow. Monthly trading estimates from Thomson Reuters over the past five years show that Chi-X often trades places with the London Stock Exchange (LSE) as Europe's largest equity trading venue. This achievement is even more remarkable when one considers that previous entry attempts by entrant high-tech markets in Europe have largely failed; the failed EuroSETS challenge of NYSE-Euronext is an example. Generally, evidence (see as examples, O'Hara and Ye, 2011; Menkveld, 2013) indicates that entrant high-tech markets are rapidly acquiring exchange market share at the expense of established exchanges.<sup>1</sup> One reason for this change is the lowering of the entry barrier for new trading venues by both technological innovations and regulatory policy. Technological innovations especially are credited with the rapid lowering of the entry barrier to exchange trading. Therefore, most entrant markets are high-tech enclaves where algorithmic trading (AT), i.e. trading with computer algorithms, thrive. AT on these new platforms manifests itself largely through the deployment of high frequency trading (HFT) strategies, hence a substantial proportion of entrant high-tech markets' price discovery is linked to HFT activity (Menkveld, 2013). Most studies agree that HFT activities improve market quality. For example, Brogaard et al. (2014), based on an analysis of 120 NASDAQ stocks from 2008–2010, suggest that HFTs help to improve market quality. Carrion (2013) finds that HFTs are more likely to trade when there is reduced liquidity, implying that they provide liquidity during periods of liquidity constraints. Hasbrouck and Saar (2013) proxy HFT by proposing a novel measure of low latency activity, which correlates with NASDAQ-defined HFT trading. They find that HFT activity improves standard proxies of market quality such as the bid-ask spread.

In this paper, I argue that new entrants must be able to attract quotes that are comparatively more informative in order to successfully challenge established platforms for order flow. Therefore, a case study is conducted to examine the intraday comparative informational quality of quotes from Chi-X's largest/main order book, CXE, and LSE's order book, the stock exchange electronic trading system (SETS). Thereafter, the determinants of the distribution of intraday price discovery are investigated and the influence of the quality of Chi-X quotes on its share in the London market for FTSE 100 stocks is tested. My argument is driven by the contention that the level of information content in the orders and transactions on European entrant high-tech markets (e.g. Chi-X) is high enough to necessitate the need for market makers to protect themselves against informed trading by posting quotes with spreads that are generally wider than those of established national platforms (see Fig. 1). Fig. 1 shows that for FTSE 100 stocks traded simultaneously on LSE and Chi-X, spreads are consistently wider on Chi-X than on LSE. This implies that high-tech entrant markets do not necessarily offer quotes that are comparatively more competitive; instead, I postulate that they attract order flow through the provision of more efficient prices. One must question why a trader would choose to accept less favourable orders, even when they are presumably more efficient. The possible answer lies in the fee structures for the platforms under investigation. It is important to note that a venue's spread could be wider than its competitors', and its overall transaction costs could still be lower or approximate its competitors'. This arises when the execution costs are lower for the venue with the wider spreads. This is the case with the two venues examined in this paper; while Chi-X's spreads are generally wider on a per-minute basis, when the execution costs are taken into consideration, the transaction costs for the platform are similar to the costs for LSE. On LSE, the standard execution charge for equities is 0.45 bps for the first £2.5 bn of an order executed. On Chi-X, it costs 0.15 bps to add the first €8 bn of an order; however, there is a charge of 0.30 bps to also remove the first €8 bn of an order.

Consequently, I advance a new argument that superior trading activity and liquidity (narrower spreads) in established venues/markets do not necessarily translate into price leadership over high-tech entrant venues/markets. The theoretical/economic justification for these hypotheses is unambiguous. The majority of orders in markets are often posted by uninformed/noise/liquidity traders (see as an example, Vega, 2006); therefore, identifying efficient prices in a timely manner is critical to them avoiding adverse execution risks. Trading on a platform that offers prices reflecting the most up to date information ahead of its competition (price leadership) helps to achieve this aim. Price leadership is an important pursuit for trading venues; according to Wang and Yang (2011), it implies that a venue acquires and efficiently incorporates information into instrument prices in a timely manner. It also speaks to the quality of the venue's management and set up as well as to its liquidity.<sup>2</sup> These are significant considerations for attracting investors/traders. Therefore, price leadership is important in attracting the order flow and the revenue needed by a new venue in order to ensure a successful entry and survival.

I find that entrant high-tech venues can achieve price leadership, even with comparatively lower levels of trading activity than incumbent exchanges. The results suggest that the competitiveness of an entrant high-tech trading venue is strongly linked to the efficiency of the prices (information content of quotes) it generates. On average, Chi-X is faster at impounding fundamental information about the value of FTSE 100 stocks into their prices than LSE, especially during early trading. This implies that the prices on Chi-X are comparatively more efficient than those on LSE. This ability appears linked to Chi-X simply being able to post/execute informative quotes at a faster pace than LSE; hence, the importance of informed traders to entrant high-tech markets. The information going into the quotes indeed may come from keenly observing order flow from the incumbent exchange (see Chordia et al., 2008). This is easily achievable if an entrant venue can develop the infrastructure needed to attract sophisticated traders with cross-market trading strategies and multi-venue trading operations. Endogenously, by successfully attracting liquidity traders, a platform becomes even more attractive to informed traders. Speed of execution, and anonymity, offered by high-tech entrants are also major draws for informed traders (see Barclay et al., 2003). The combination of the informed and uninformed traders occupying the same market

<sup>1</sup> Kwan et al. (2015) also investigate competition between incumbent exchanges and dark pools. Their study is context-driven and based on the US regulatory environment; they find that dark pools hold a competitive advantage over exchanges when trading is spread-constrained. This current paper engages with a different regulatory environment, based on the Markets in Financial Instruments Directive (MiFID) currently in force in Europe.

<sup>2</sup> Liquidity is defined as the ability to trade large quantities of an instrument, relatively quickly, anonymously, and with little or no price impact (see Campbell et al., 1997).

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