High-frequency trading can offer increased market liquidity and greater efficiency. Two heads of electronic trading offer their insights on its role in marketmaking.

**Repeat performance**

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High-frequency technologies promote market efficiency by providing an exchange-like service, which tightens spreads, increases liquidity and allows profit-taking. Strategies that focus on the passive side of a trade are an important liquidity provision for the market. These tend to be statistical trades with relatively short horizons and the goal is to make money through spread capture and market rebates received in the course of posting orders. With market latency arbitrage, high-frequency trading technologies work to keep prices in line when there are different quotes on different venues. Other strategies, with mean holding periods of a few seconds or minutes, help remove inefficiencies from the market, such as a relative mispricing between securities. This could be an exchange-traded fund (ETF) versus a basket of stocks or between stocks that have a high degree of correlation with each other.

Speed matters, independent of the holding period horizon and trading objectives. Take for example, an index or ETF arbitrage strategy, where traders are making markets based on observed prices in the underlying securities.
When there is a significant enough price movement, traders want to react quickly and update their quote. The need for speed is not based on how quickly you accumulate your position because you are on the passive side of the trade. It has more to do with when new information comes into the market and how quickly you can take down your old quote and replace it with a new quote that reflects that new information.

In order-driven markets, bids and offers never arrive simultaneously, so there is always a need for a liquidity provider, i.e. the economic agent that bridges the mismatch in time between buy demand and sell demand. Historically, human marketmakers have filled the role of providing a continuous quote to help facilitate trading. However, as technology and regulatory innovation, such as Regulation National Market System, has allowed markets and trading to become faster, so the human marketmakers’ ability to quote effectively has become harder to accomplish. Machines and algorithmic processes have largely supplanted the human-driven liquidity providers and high-frequency technologies are now filling the role as the specialists and marketmakers of old. The result is probably a substantial net increase in efficiency of US equity markets, in terms of spreads coming in and frictional costs falling.

High-frequency trading is predominantly focused on highly liquid names though there is an evolution towards applying the same statistical techniques to the lower liquidity end of the market and securities with less turnover and more inherent trading risk, as these stocks are harder to exit. Though there has not been an explosion in volume in these smaller stocks, that same level of automation we see in the high liquidity sector is being introduced. However, the amount of high-frequency trading is limited by the amount of long-term turnover. The role of the high-frequency trader is to accumulate that liquidity and deliver it to the buyside by matching trades over small horizons. If that buyside trader is not there, then the high-frequency trader cannot provide the service.

In the race to capture the modern marketmaker – the high-frequency trader – and be the fastest venue, exchanges have possibly overlooked their key regulatory responsibility and obligation to provide orderly markets. Exchanges have been reticent to put in place risk and limit checks and circuit breakers to halt or slow trading that would have prevented the great and sudden price dislocations seen on May 6 2010, a largely avoidable event. Part of what exacerbated the situation on May 6 was high-frequency traders not being able to easily understand what was going on and so they stopped providing liquidity. This led to price movements being greatly exaggerated and so over the horizons they transact, high-frequency traders actually create genuine liquidity and damp volatility.

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High-frequency trading is like a chicken and egg scenario. Does it provide liquidity to markets or do traders only enter markets that are liquid enough for them to make money? I believe it is a bit of both, though many strategies depend on very liquid markets in both cash and derivatives.

As there are more execution venues in the US to trade, we have seen liquidity grow in US equities, which has also provided more arbitrage opportunities for high-frequency players. We have seen the same impact in Europe after the introduction of Markets in Financial Instruments Directive with more venues emerging, such as Chi-X and Turquoise, and high-frequency trading playing a big role in generating liquidity and market-making on these platforms.

However, Asia has not seen high-frequency pick-up to such a great extent, largely because liquidity in the region is not good enough but also due to market structure and regulation. Nonetheless, high frequency is active in Australia, to a certain extent in Japan, after the Tokyo Stock Exchange’s launch of its next-generation trading system Arrowhead, and in markets such as Korea, which has one of the most liquid index futures and options markets in the world.

In evaluating the impact of high-frequency trading in the US, we find advantages and disadvantages. On the plus side are increased liquidity provisioning, narrowed spreads among certain stocks, faster and more reliable execution speeds and enhanced volumes to US exchanges, suggesting a healthy market for price formation. The downside includes increased intra-day volatility in some stocks, adverse selection for some market participants and higher implementation shortfall costs. However, separating the effect of higher implementation shortfall costs attributed to the financial crisis.

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as opposed to high-frequency trading adoption is challenging. There is also some concern that high-frequency trading generates low quality liquidity, that it can generate false trading signals creating more noise trading and at times disrupt the markets through “rogue algorithms”.

In this grand game, low-tech institutional trading firms are complaining about the unfair playing field afforded to these high-frequency, high-technology players. Indeed, many traditional money managers do not trade against high-frequency desks due to the fear of being outplayed by traders who are trying to take advantage of every possible arbitrage opportunity.

However, if there is an arbitrage opportunity in the market then that suggests that markets are not that efficient, so having different technologies, adding different styles of trading and different types of investors helps to make the market a more efficient venue to trade.

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If we look at latency numbers, we are talking today in terms of microseconds and even nanoseconds on some exchanges and alternative execution venues, something we never imagined even a few years ago. The market has evolved from an open outcry method to sub-microsecond latencies and this has only been possible because high-frequency players have pushed the boundaries and enforced innovation in financial technology.

Benefits derived from the development in infrastructure are not purely for the high-frequency community; they have also been rendered to the traditional money managers as well. For instance, if Daiwa creates a very low latency system, it provides the same service to its other investors, not just high-frequency specialists, so they can trade much faster and capture better prices and liquidity.

High-frequency trading can introduce an outstanding level of volume to the market. Index arbitrage or statistical arbitrage strategies or simply capturing the price movement on a stock, may result in traders turning over one security 50 to 100 times a day, which contributes greatly to liquidity and volumes. This is probably one reason why the alternative venues and exchanges are so keen on bringing more high-frequency players on board because they contribute to overall volume and naturally to the fees generated for these equity trading platforms.

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