The Advocate
FOR INSTITUTIONAL INVESTORS

High-Frequency Trading: For Better, or for Worse?

Trading at the Speed of Light

By Emily Lambert

When brokers met under the buttonwood tree in lower Manhattan in the 1700s, they swapped stocks and bonds in the open air. A century later, in Chicago, the Board of Trade had a visitors' gallery that attracted crowds when trading got wild. In 2009, at the Chicago offices of the now-closed high-frequency trading (HFT) firm Infinium Capital Management, new employees learned about the markets by mock trading in a reproduction of a trading pit, where they could see the other participants.

Transparency makes the market easier to understand, and perhaps more importantly, to police. And transparency is one of several elemental market traits that appear to have changed in the era of electronic trading.

In the history of the ever-evolving financial markets, electronic trading represents a natural next step. The super-fast traders of today are directly informed by the practices of old, and of not that long ago. Some of the biggest HFT firms were founded by people who got their start in open outcry trading.

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Like the specialists and speculators of decades ago, HFT firms stand between buyers and sellers, facilitate trading, and tighten spreads. And as has been the case since markets began, some traders break rules, or benefit from how those rules are written. "The primary principle behind our markets has always been that no one should carry an unfair advantage. That simple but fundamental principle is being broken," wrote Schwab in a 2014 statement decrying HFT. I regret to inform that the same fundamental principle has been broken many times before over the years. I agree that no one should carry an unfair advantage—but many have.

That said, in the electronic era, the market has changed in a few fundamental ways. Understanding how it has done so, for better and worse, could help everyone involved craft rules and policies that create and maintain strong markets.

Markets Need Transparency

To understand what has changed, I had lunch with one of the early architects of today's electronic markets, with a background on the futures and options side of trading: Glenn Windstrup. Financial exchanges used to be smaller, independent, and overseen by committees, so these markets have many architects. At least two people are celebrated as the "father of financial futures," for example. But Windstrup, who held a dozen positions ranging from board marker to Senior Vice President at the Chicago Mercantile Exchange from 1967 to 1983, fits squarely among the electronic trading pioneers. I knew he was an early advocate of electronic trading and helped set the industry on its current course. At the Chicago Merc, he computerized some trading-floor functions, and went on to develop and deploy one of the derivative industry's first electronic trading systems, for the Sydney Futures Exchange. For two decades after that, he licensed systems, including ones that enabled electronic trading, until he left the business four years ago.

Electronic trading has changed since those early days, and what has its transformation done to the market?

Everyone from "Flash Boys" author Michael Lewis to politicians to Schwab has been criticizing HFT, while Vanguard

Chief Bill McNabb has defended HFT firms, saying they're helping make investing cheaper for investors. "From a data perspective, we can see what's happened to our fund shareholders over the last 20 years and they've benefitted by that reduction in transaction costs," the chief of the world's largest mutual fund firm told *The Financial Times* in 2014.

I was curious to know what Windstrup thought of both HFT and the state of the financial markets. Years of reporting on the topic had left me with unresolved questions. Is HFT good or bad on balance? Should its practitioners be left alone, or should their trading be banned, taxed out of existence, or re-envisioned with critical safeguards? Are today's markets serving society, or hurting it?

I was surprised by his pessimistic tone. "I was a crusader for electronic trading," he acknowledged over lunch. He believed it would create, among other things, additional transparency. But he is concerned that it has done the opposite.

He provides an example: Say a large futures trader of the 1970s or 1980s walked into a pit, drove the market price down by indicating he'd be selling a large number of contracts, then quickly bought up contracts at a discount. Someone on the exchange might notice it, Windstrup says, and call the pit committee chairman, who could intervene, review the matter, and slap the transgressor with fines. Other traders would take note, and they might even shun particularly bad actors. When it comes to the pit committees, "They did a damn good job, in retrospect," says Windstrup.

In the electronic era, trading is anonymous. In a way that leveled the playing field, allowing people to trade without biases, or even tall traders, getting in the way. But anonymity also means traders can't police each other in the way they once did.

Electronic trading should have created a complete and undeniable computerized audit trail that could be used to punish bad actors. But super-fast trading generates so much order activity that the audit trail, while it exists, is too big and overwhelming to sort through within a useful amount of time. After the flash crash, it took five months to issue a report detailing the sequence of events.

It doesn't help that a lot of trading happens off exchanges, in dark pools. In equities, according to TABB Group, off-exchange trading recently comprised 36 percent of total volume. The result of all this is that the market, summed up as a single entity, is less transparent than it used to be.

The Reason for it all: Capital Formation

As electronic trading has altered transparency, it has also helped advance and accelerate something else: complexity. Markets are now so complex and closely tied together that they're practically knotted.

A century ago, exchanges were essentially utilities. Stock markets and bond markets enabled companies to grow using investors' money. Futures markets let commercial firms manage their risk.

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Quotable

"The world clings to its old mental picture of the stock market because it's comforting; because it's so hard to draw a picture of what has replaced it; and because the few people able to draw it for you have no interest in doing so."

Michael Lewis, author of "Flash Boys"

Those firms were originally agricultural, and as financial futures and options developed, virtually any entity exposed to a wide variety of financial risks could use the market's risk-management tools.

The end result was capital formation. In a loose, nontechnical sense, capital formation creates value. Creating value translates into creating wealth.

But the markets, long before electronic trading, started weaving together. In 1973, the creation of options married derivatives and stocks. Then Vanguard founder John Bogle debuted the index fund, and futures traders in Kansas City launched futures contracts on stock indices. All these led to more complex financial products.

As new products rolled out, markets grew intertwined, and traders found it possible to arbitrage. Bankers in London could buy British Pounds locally, immediately lay them off in Chicago, and lock in a profit. To some extent this was productive trading: it added liquidity, brought prices into alignment, and made markets more efficient. But there's an argument to be made that trading became less about the fundamentals of businesses and more about arbitrage opportunities the products were creating, and as electronic trading accelerated arbitraging activity, about the trading algorithms and the many nuances those introduced.

"This naturally ties various instruments together in not necessarily healthy ways where the tail and dog meld," Windstrup said at our lunch.

HFT, which accounts for roughly half of US equity volume, according to TABB Group, has become shorthand for trading that isn't fundamental. High-frequency traders have been accused of front-running orders, and most importantly, in Windstrup's view, of enjoying better access and information that allows them to arbitrage without taking on any real market risk. Is their trading still enabling companies and commercial interests to grow and lay off risk?

Many Opinions Matter

Windstrup believes at least one more thing has changed in the electronic era: market concentration.

The futures markets in Chicago were for years limited by physical size. The pit where traders and brokers met to exchange Eurodollar futures grew to the size of a football field, and traders on one end could neither see nor hear the traders on the other. Electronic trading allowed them to meet on a common computer system, where space would no longer hinder their communication. Moreover people from around the world could participate more easily.

More people, voices, and opinions create more informed prices. Having fewer participants, in all areas of business, not just the financial markets, leads to narrower perspective. That's something most of us can, perhaps ironically, agree on.

Windstrup fears the market appears to be going in the direction of fewer, bigger market participants, who thrive thanks to the best information, which they can only get and exploit if they can afford expensive, sophisticated technology.

How many are trading today? In 2012, research by Adam D. Clark-Joseph, now assistant professor of finance at the University of Illinois, created controversy with an empirical look at high frequency trading activity in the E-mini Standard & Poor's 500 futures market. Much of the controversy surrounded HFT firms' aggressive trading, or what he termed "exploratory trading." But of interest to some was the larger picture of the market. In the six-week timeframe that the researcher considered, 41,778 accounts traded the contract, and HFT firms represented less than 0.1 percent of them. But in the sample of 30 HFT firms that he considered, the eight largest dominated in terms of trading volume.

Compare that snapshot with the hundreds or thousands of proprietary traders who used to crowd physical futures pits. Concentration has existed before: large traders who dominated markets became famous. But concentration is worrisome, particularly if fewer participants are around to fill the void if HFT liquidity disappears. The trading ecosystem has to be healthy.

The market, I've been told, is a microcosm of society. Our society is democratic, and one of its strengths is its capacity for self-correction. When something is wrong, the democratic process offers mechanisms through which what's wrong can be fixed.

Electronic trading has helped change the market, in some ways for the better. The market is more efficient than it was, and transaction costs are cheaper. But in some ways, changes are problematic, as electronic trading seems to have reduced transparency, accelerated complexity, and changed the trading ecosystem.

As the rules of trading evolve as the market does, it may help to at least put in place more robust systems to analyze and police trading. Ironically, and despite criticism of electronic markets, what the market may need in this era is more technology, not less. ◆

About the Author

Emily Lambert is Editor of *Capital Ideas,* a publication of the University of Chicago Booth School of Business. She spent a decade as a reporter for *Forbes*, and is author of the book "The Futures: The Rise of the Speculator and the Origins of the World's Biggest Markets." Published by Basic Books, "The Futures" won an Eric Hoffer Award in 2011.

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