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Fixing the Market in a Post-Flash Boys World

A look at what went wrong, and how to make it right.

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The release of Flash Boys, in which author Michael Lewis claims that the stock markets are rigged, has created a feeding frenzy of indignation. Yet again, there are allegations that the U.S. financial system has been corrupted. Most indignant are the regulators who have yet again failed to adjust the markets to the new realities of the technology and competition that they themselves championed. We are now witnessing a stampede to the moral high ground as government agencies attempt to relinquish any responsibility for the state of the financial markets' microstructure that they built.

There were many times when our markets did not keep pace with the evolving needs of participants. Regulators always stepped in to point out the weaknesses, and the financial industry always stood up and accepted the challenge. When the Paper Crisis of Wall Street nearly collapsed the financial system in the 1960s, for example, Herman Bevis, the retired head of Price Waterhouse, led the initiative to solve this dilemma. When the first amendments to the 1930s National Market System (NMS) were implemented in the early 1970s, James Devant, then the chairman of Paine Webber, led that initiative. When the Inter-market Trading System was introduced in the late 1970s, NYSE chairman John Phelan took the reins. And during the Market Crash of 1987, Nicholas Brady, the chairman of investment bank Dillon Read, led an investigation into the fundamental market mechanisms that caused the crash. John Reed, the chairman of Citibank at the time, stood up soon after to oversee what became a 20-year project to re-engineer the fundamentals of the global infrastructure of finance from the lessons learned in the 1987 crash.

But 2005's Regulation National Market System, or Reg NMS, is a different breed of market restructuring. Reg NMS was carried out under regulators' edicts that dictated, in an unprecedented fashion, the technical architecture of the new market's system design. Even though the SEC issued consultative papers and received comment letters and input from the industry, it was their judgment that prevailed in the end. In the preamble of the final rules of Reg NMS, the SEC wrote: "The Commission always seeks to achieve consensus, but trying to achieve consensus should not impede the achievement of the statutory objectives for the NMS and should not damage the competitiveness of the U.S. equity markets, both at home and internationally. We believe that further delay is not warranted and therefore have adopted final rules needed to modernize and strengthen the NMS."

Good things came as a result of Reg NMS in 2005, many of which were intended, such as the lower cost of trading. That said, there were many unintended consequences that were also predicted and ignored at the time. The most significant of the known faults in the design was the Intermarket Sweep Order. This ISO order type was intended to move an order from its entry point at an exchange or ATS throughout the multiple trading venues when price improvement and/or yet unfilled portions of the order were to be filled at other trading venues. Another unprecedented system design was the permitted internal matching of orders by brokers who had the order flow to do so. These were mainly the biggest brokers.

We also saw trading volume explode after Reg NMS' implementation. At the time, industry observers understood that by dropping pricing points from fractions to decimals, for every price point there would be 100 ways to price the bid or offer, 121/2 times as many as the one-eighth gradations allowed previously. People anticipated that trading volume would skyrocket and it did. The other anticipated issue was the lowering of the average trade size. It would be harder to position a block upstairs and place it with a trading venue to buy up all the prevailing interest above or below the anticipated execution price. There was no more centralized inter-market trading system controlled by the exchanges; it was now a decentralized system where entry into the market was through each trading venue controlled by broker-dealers.

Technology Outruns the Markets

Looking back, it's now apparent that this reform was taking place at a time of major technological change that was not well understood by financial executives and certainly not by the policy pundits or lobbyists that offered input to the SEC. It's unfortunate that the technologists who understood this mammoth shift were not given a voice; instead, their position in the large firms and their activities in industry trade associations were sublimated by lawyers, economists, lobbyists and the revenue-producing executives who spoke on behalf of the industry. Of the 51 panelists on the SEC's final hearings on Reg NMS, I observed just three technologists present and not one representing the "speeds and feeds" world into which Reg NMS was about to be catapulted.

That the speed of networks had accelerated to unprecedented levels with the fiber installed during the Internet boom and subsequent bubble burst was lost on the regulators. This unused fiber, referred to as "black fiber," remained dormant until lit up by the traders who were looking to speed up their ISO orders. They could now link directly to each trading venue and execute thousands of trades between the time it took the ISO order to travel to the other trading venues and the time it took to update the NBBO. Welcome to the HFT world!

The existing market infrastructure has been engineered by regulators, initially by the SEC and later by the CFTC, who are not knowledgeable industry market participants, and supervised by industry leaders as in the past. It was inevitable that someone of stature in the industry would step up to control the latest debate and return us all, regulators and industry, to such leadership

Leadership Emerges

Recently the Wall Street Journal reported that one of the industry's most innovative and humble leaders, patriarch Ned Johnson of Fidelity Investments, was organizing an effort to reduce costs and streamline trading for a consortium of investment firms to deal with the issues of high-frequency traders interacting with long-term investor orders. Large asset managers, like Vanguard, T. Rowe Price and BlackRock, handle Main Street's investments through mutual funds and individual retirement plans. The move by Fidelity is rare in the mutual-fund industry, where the large-asset managers don't typically form consortiums. The potential to match order flow amongst themselves in their own "dark pool" can potentially be a game changer. It could produce a low-cost trading platform and set the tone for the reengineering of the markets' infrastructure without regulators meddling in a revamped design, as was the case in prior decades of industry leadership.

As a private company, Fidelity is one of the last of the major financial institutions to have the founders' family still associated with the firm. This was the model of the old investment banks that had their founders' names on the door and that have largely disappeared. Johnson seems to be rising to the occasion to lead on this controversial issue and is following in the footsteps of those other industry leaders from the past. His interest in technology is legendary among his peers. He was reported to have placed his desk in the computer room and camped out until technology glitches were fixed. He personally escorted me down into the basement of his building where he proudly pointed out the backup batteries that would keep his shop operating 24/7. Fidelity was one of the two founders of the FIX trade communications protocol, the first mutual fund company to set itself up as a discount broker, and the first to establish a clearing company for other financial intermediaries.

Fixing the Problem

Those in Johnson's peer group should publicly support his initiative, step up and embrace his leadership, and join in fixing the market infrastructure plumbing so competitive forces can unleash their innovative spirits around a level playing field. Toward this end, here are a few suggestions for fixing the markets' microstructure:

Speed

Slowing down the market so all orders enter the order queue simultaneously ensures that priority in the queue is based on price improvement. In the 350 microseconds that the IEX ATS slows down its orders so that they arrive simultaneously at the order books of multiple trading venues, 7,000 orders can be sent. Such volume of orders arriving at different times distorts the top-of-book price on each trading venue relative to the public NBBO. A single market infrastructure design is one solution. Precedents can be found in the design of the Internet, in the intelligence community's information-gathering efforts, and in the daily business of Google, Amazon and other technology-driven companies.

Using similar concepts, local databases can be federated into a virtual view of exchange/trading venue order books. This design can operate in real-time across the globe, allowing a single view of the collective order books as though it were a CLOB that is centralized virtually but not physically.

Risk

Some microseconds can be "borrowed" from slowing down orders and used to perform risk management functions on trades and counterparties. These include credit and trade limit checking, aggregation of individually established limits across multiple financial intermediaries, and a forward view of how those 7,000 trades will affect markets before they are entered into the markets. Most importantly, regulators' computers will be able to monitor markets in real-time.

Value-added services

With a level playing field where time advantage is eliminated, price improvement will dominate and create further value propositions for clients and trading firms alike. New competition on innovative services would surely ensue. Such services could include mechanisms to execute trades at size; analytic, aggregation and real-time execution through payment services; straight-through processing extended to bookkeeping and reporting; and real-time collateral and margin provisioning.

Finally, the new plumbing of the market can be extended to all electronically traded, regulated markets, allowing for integrated trading strategies and aggregated value-added services.

Now is the time to fortify the market and prove that it is not rigged one way or the other.

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