

The Honorable Mary Jo White
Chairman
U.S. Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549

Dear Chairman White:

We would like to thank the Securities and Exchange Commission (the “SEC”) for taking up the issue of market structure reform. We are particularly grateful that the SEC has chosen to hear expert opinions and take public comments on this issue. Central to the issue, of course, is the maker-taker system used by the national exchanges the SEC oversees.

The enclosed paper addresses the value of the maker-taker system while offering proposals for market structure reform. The paper was produced by members of the Wake Forest School of Law Community Law and Business Clinic after careful research and reflection. The three proposals set forth in the paper also draw on years of experience in both the financial and legal professions. We sincerely hope that our work is helpful to the SEC as it takes on the task on evaluating and reforming the current market structure.

Sincerely,

John I. Sanders
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Any discussion of market structure reform must begin with an investigation of the current market structure. At the heart of our current market structure today are high-frequency traders. When the regulators, academics, and journalists set about investigating high-frequency traders in the aftermath of the Flash Crash, one of the key questions was how high-frequency traders had come to occupy an essential role in the market structure in the first place. The origins of high-frequency trading have been traced to two separate and distinct sources. The first is the rise of quantitative analysts or “Quants”. Quants are traders who “compose complex mathematical models to detect investment opportunities.”¹ Among the first quants was Ed Thorp, who brought notoriety to the movement by writing *Beat the Market: A Scientific Stock Market System* in 1967.² On the heels of Thorp’s publication, some of the first quants began to explore Wall Street and its securities market structure.³

With the advent of electronic communication networks (ECNs) to facilitate trading, the quants had their first opportunity to make a profit off of pure tech-based speed advantages.⁴ Computers recognized opportunities faster than the human mind and eye. Electronic signals could travel faster than any Wall Street order runner. However, Quants armed with computers and algorithm-based trading software found that mandatory human involvement in all trades caused friction within their theoretically perfect systems.⁵ The NASDAQ market makers and NYSE specialists, the humans designated as liquidity-maintaining middle men in their respective markets,⁶ had the ability to slow trading and ignore orders from disfavored sources altogether.⁷

¹Michael Schmidt, *Quant Strategies – Are They For You?*, INVESTOPEDIA, www.investopedia.com/articles/trading/09/quant-strategies.asp.

² SCOTT PATTERSON, *THE QUANTS: HOW A NEW BREED OF MATH WHIZZES CONQUERED WALL STREET AND NEARLY DESTROYED IT* 27 (2010).

³ *Id.*

⁴ SCOTT PATTERSON, *DARK POOLS* 90 (2012).

⁵ *Id.* at 28.

⁶ See George T. Simon & Kathryn M. Trkla, *The Regulation of Specialists and Implications for the Future*, 61 Bus. Law. 217 (Nov. 2005) (Describing the roles of specialists and market makers within their respective exchanges).

It would take more than the emergence of quants for high-frequency trading to become a powerful force in the markets.

The second source of high-frequency power and what ultimately allowed high-frequency traders to overcome humans in the market place was the bad behavior of privileged humans in the market structure. On Black Monday in 1987, NASDAQ market makers damaged their indispensable status by selectively answering their phones or refusing to answer altogether during a then-unprecedented one-day crash.⁸ Humans took a further hit in 1994 when a paper by Bill Christie and Paul Schultz indicated that NASDAQ market makers were likely colluding to create artificially high spreads in order to generate greater profits for themselves.⁹ A subsequent Department of Justice report found that millions of retail and institutional investors were victims of “anticompetitive conduct which results in higher trading costs.”¹⁰ The SEC Market 2000 report further found that abusive practices related to the then-existing 1/8 of a dollar tick was “[c]ausing artificially wide spreads and hinder[ing] quote competition.”¹¹ It was clear that “NASDAQ’s market makers were siphoning billions from investors by keeping spreads never less than a quarter.”¹² The Clinton administration concluded that “significant changes are in order”.¹³

The most significant change implemented was the introduction of competition to the market structure that is currently under review by the SEC. First, new exchanges would be able

⁷ *Id.*

⁸ LEWIS, FLASH BOYS 9 (2014).

⁹ See William Christie & Paul Schultz, *Why Do NASDAQ Market Makers Avoid Odd-Eighth Quotes?*, 49 J. of Finance 1813 (1994).

¹⁰ *Justice Department Charges 24 Major NASDAQ Securities Firms With Fixing Transaction Costs for Investors*, SEC (July 7, 1996) <http://www.justice.gov/archive/opa/pr/1996/July96/343-at.html> [hereinafter *Reno Statement*].

¹¹ *Market 2000: An Examination of Current Equity Market Developments*, SEC (Jan. 27, 1994), <https://www.sec.gov/divisions/marketreg/market2000.pdf> [hereinafter *Market 2000*]

¹² PATTERSON, *supra* note 4, at 102.

¹³ *Id.*

to open with capital requirements of just \$1 Million.¹⁴ When the rules went into effect on January 20, 1997 there were four new ECNs as part of the system alongside NASDAQ and the NYSE.¹⁵ Second, markets would be forced by the Order Handling Rules to route orders to the venues where they would get the best execution.¹⁶ Third, trades would be decimalized and ticks would be just a penny.¹⁷ The new market created by these rule featured lower costs, less human friction, and greater capacity to handle high-frequency trading. From that point on, high-frequency trading grew dramatically but quietly.

In addition to growing in scale, the role of high-frequency traders within the financial markets fundamentally changed after the reforms of the late 1990s increased competition between exchanges. The exchanges, whatever their nature, could not survive by acting as venues for one institutional trader to trade against another. Such an exchange would feature large blocks waiting in silence like massive cargo ships waiting for tug boats in a harbor.¹⁸ Exchanges need a reliable source of liquidity. It was in hopes of satisfying that need that the exchanges began to attract high-frequency traders.¹⁹ The problem for the exchanges was that they were bargaining in an ultra-competitive space for that precious liquidity. In recognition of that dynamic, exchange operators began to partner more closely with high-frequency traders.

One of the first perks offered to high-frequency traders by the exchanges is now known as the maker-taker system.²⁰ As early as 1998, an ECN called Island offered a rebate to high-

¹⁴ *Id.* at 138.

¹⁵ *Id.* at 138.

¹⁶ *Id.* at 127.

¹⁷ 17 C.F.R. 242.612.

¹⁸ See Kenneth French, *Presidential Address: The Cost of Active Investing*, 63 *J. of Finance* 1537 (2008)

¹⁹ PATTERSON, *supra* note 4, at 171.

²⁰ The maker-taker system is the ultimately fact in determining whether in deciding whether institutional investors are lured to exchanges as prey for valued high-frequency trading clients or whether high-frequency traders are induced to the exchanges to trade with institutional clients. The fact that high-frequency traders are the ones paid to trade indicates that they are the one's lured. The argument otherwise is akin to arguing men are attracted to bars by a ladies night in which women drink for free. It's plainly illogical.

frequency traders who would make liquidity on its exchange by trading against participants with outstanding limit orders.²¹ At the same time, the exchange operators would charge the institutional traders who took that volume a fee slightly larger than the rebate.²² The exchange operator would keep the difference between the rebate and the charge.²³ Exchanges made a profit, high-frequency traders made a profit, and institutional traders paid to get liquid markets for their large orders.

Over the years the maker-taker system has attracted both praise and criticism.²⁴ Much of this criticism is leveled at the layers of complexity that maker-taker pricing model features.²⁵ We are sure that many of the materials you receive on market structure will disparage that system. Such criticism has become common place after the commercial success of Michael Lewis' *Flash Boys*. Some have argued that the system is corrupt, overly complicated, and unnecessary.²⁶

Still, practical experience shows us that there are tremendous benefits realized from using this system. The maker-taker system is praised for creating "liquidity, competition, and efficiency" in the markets.²⁷ Due in large part to those merits, "this 'maker-taker' system became the de facto method of trading for the vast majority of the U.S. stock market" within a decade of its introduction.²⁸ Even the venerable NYSE now relies on this system.²⁹

²¹ *Id.* at 157.

²² Stanislav Dolgoplov, *The Maker-Taker Pricing Model and Its Impact on the Securities Market Structure: A Can of Worms for Securities Fraud?*, 8 Va. L. & Bus. Rev. 231, 233 (2014).

²³ *Id.*

²⁴ *Id.*

²⁵ Scott Patterson and Andrew Ackerman, *Regulators Weigh Curbs on Trading Fees*, WALL ST. J. (Apr. 14, 2014), <http://www.wsj.com/articles/SB10001424052702303887804579501881218287694>. ("The result, critics say, is an overly complex market often driven more by how fees are parceled out than by the availability of a stock.")

²⁶ Michael Pagano, *What Michael Lewis Missed: The Maker-Taker Model Has Outlived Its Usefulness*, SeekingAlpha.com (April 25, 2014), available at <http://seekingalpha.com/article/2166453-what-michael-lewis-missed-the-maker-taker-model-has-outlived-its-usefulness>.

²⁷ Letter from Optiver to the Comm. of Eur. Sec. Regulators 11 (Apr. 30, 2010), available at http://www.esma.europa.eu/system/files/1_OPTIVER_comments_on_CESR_10_142.pdf.

²⁸ PATTERSON, *supra* note 4, at 42.

²⁹ *Trading Information*, NYSE, <https://www.nyse.com/markets/nyse/trading-info> (last visited Feb. 19, 2015).

Notwithstanding criticism of its complexity, this widespread adoption is strong evidence of the value of this structure.

The relative value of this system must be fully appreciated as we consider the most appropriate regulatory approach moving forward. A dramatic shift would restrain the exchanges from carefully maintaining the liquidity through the use of fine-tuned incentives. Meanwhile, calls for full scale abolishment of the maker-taker system revives the conversation we had nearly two decades ago when confronted with the corruption of market makers and specialists. It was decided then, and justifiably so, that competition between liquidity makers was the only hope of maintaining a securities market free of corruption at its very core.

The justifications for departure from a maker-taker system wilt when alternative market structures are considered. It may be that the maker-taker system, with all its faults, is simply the best available system because competition rather than cartelism is at its heart. Historical reflection allows us to appreciate that. The democratic and egalitarian appeal of this structure cannot be ignored.³⁰ These ideals and the practical adoptions of this system have created a solid foundation for maker-taker in our financial markets. Pragmatism demands that we identify areas where this foundation can be crafted, molded, and ultimately improved upon, as opposed to entirely reinvented. Instead of completely overhauling the maker-taker system, a more critical eye should be cast on participants within the current market structure and the advantages they enjoy.

In the wake of the Flash Crash, the world began to take notice of the advantages that high-frequency traders had accumulated. Whether high-frequency traders helped cause the Flash Crash or not does not conclusively decide whether these traders should escape scrutiny. As

³⁰ Letter from John A. McCarthy, Gen. Counsel, Global Elec. Trading Co., to Elizabeth Murphy, Sec'y, U.S. Sec. & Exch. Comm'n 5 (June 23, 2010), available at <http://www.sec.gov/comments/s7-090/s70910-25.pdf>.

President Barack Obama’s former White House Chief of Staff Rham Emanuel once said, “You never want to let a good crisis go to waste.”³¹ That is perhaps nowhere truer than in the case of securities law, where reform seems to only come on the heels of a crisis. A hard look at market participants who were entrusted with a new role in the late 1990s is long overdue.

In this case, an examination of high-frequency traders shows that they have consistently demanded additional perks within the market structure after accepting the role of liquidity makers in the 1990s. Each excess that lines the pockets of high-frequency traders is outside the bounds of the initial bargain and has the potential of harming investor returns. We suggest that by implementing three proposals the SEC can curb the excesses of high-frequency traders without losing the benefits of a competitive market structure. These proposals are to utilize existing market manipulation rules, limit the order types it approves for national exchanges, and regulate the practice of colocation with greater scrutiny.

Market Regulation Proposals

A. Utilize Market Manipulation Rules

One possible approach to reigning in high-frequency trading firms is to aggressively use § 9(a)(2) of the Exchange Act of 1934 to punish market manipulation. Section 9(a)(2) states that it shall be unlawful for any person to make a series of transactions in a security, manipulating the market by “creating actual or apparent active trading in such security, or raising or depressing the price of such security, for the purpose of inducing the purchase or sale of such security by others.”³²

³¹ Gerald Seib, *In Crisis, Opportunity for Obama*, WALL ST. J. (Nov. 21, 2008), available at <http://www.wsj.com/articles/SB122721278056345271>.

³² 15 U.S.C. § 78i(a)(2) (2014)

Section 9(a)(2) was originally directed at what some argue was one of the most serious abuses in the early 20th Century securities markets – investment pools.³³ Investment pools “ran up the prices of securities on an exchange by a series of well-timed transactions, effected solely for the purpose of ‘manipulating’ the market price of the security.”³⁴ Once the price was pushed higher through manipulation, the traders taking part in the scheme would sell their shares at a profit.

Those looking at the activities of some high-frequency traders could see the similarities between their tactics and those of investment pools. For example, high-frequency traders sometimes employ a scheme that aims a quick burst of trades toward a particular security to move its price and capture a profit when the movement attracts additional interest. The practice, which is much older than high-frequency trading, is called “layering” or “spoofing”.³⁵ In spoofing, the high-frequency trader places orders with no intention of having them executed. Instead, the trader places the orders “to trick others into buying or selling the security at an artificial price driven by the orders that the trader then executes.”³⁶ Once increased interest has moved the security higher, the high-frequency traders sell their positions at a profit. Eric Hunsader echoed the thoughts of many in saying, “We can’t understand why this is allowed to continue, because at the core, it is pure manipulation.”³⁷ Soon after the Flash Crash shed light on this practice, the SEC began using anti-manipulation provisions of §9(a)(2) to bring enforcement actions against high-frequency traders.

³³ DAVID RATNER & THOMAS HAZEN, *SECURITIES REGULATION IN A NUTSHELL* 131 (7TH ed. 2002). See Generally Joel Seligman, *Historical Need For a Mandatory Corporate Disclosure System*, 9 Corp. L. 1, 28 (1983-84). But See Paul Mahoney, *The Stock Pools and the Securities Exchange Act*, 51 J. of Fin. Econ. 343 (1999) (Questioning whether stock pools actually manipulated securities markets).

³⁴ *Id.*

³⁵ *SEC Charges N.Y.-Based Brokerage Firm with Layering*, SEC, (Sept. 25, 2012), <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1365171484972#.VQCXKuF3HfY> [hereinafter *Trade Alpha*].

³⁶ *Id.*

³⁷ PATTERSON, *supra* note 4, at 63.

The SEC has had success bringing enforcement actions against high-frequency traders engaged in spoofing schemes since 2012. One early enforcement action was brought against Trade Alpha Corporate Ltd. and Demonstrate LLC in 2012.³⁸ In that scheme, traders placed genuine orders that were meant to be executed.³⁹ The same traders then immediately entered several orders on the opposite side of the market from the genuine trade.⁴⁰ This sudden explosion of activity in a security that a moment ago had no orders would catch the attention of algorithm-driven trading machines deployed by other firms.⁴¹ When those firms placed genuine orders against the initial genuine order, the spoofing firms would cancel their open orders.⁴² They would then place a genuine order on the opposite side of the market and repeat the spoofing scheme to close out the position.⁴³ The firms' scheme was discovered and stopped by the SEC, but only after it was carried on for 21 months.⁴⁴

Another instance of the SEC using §9(a)(2) to check high-frequency traders came in 2014. On April 4, 2014, the SEC announced charges of spoofing and a settlement against a high-frequency trader, Visionary Trading LLC, and its broker, Lightspeed Trading LLC.⁴⁵ The scheme employed in that case was simpler than that employed by Trade Alpha Corporate and Demonstrate. It consisted of posting false orders to attract algorithm-based trading machines to take a position.⁴⁶ Once the trades of the algorithm-based trading machines executed and moved the market to an artificially elevated or depressed level, Visionary Trading would take the

³⁸ *Trade Alpha*, *supra* note 33.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *SEC Charges Owner of N.J.-Based Brokerage Firm With Manipulative Trading*, SEC (April 4, 2014), available at <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370541406190#.VQCYr-F3Hfy> [Hereinafter *Visionary Trading*].

⁴⁶ *Id.*

opposite position and profit.⁴⁷ The SEC stopped the scheme, but only after it was carried on unabated from May 2008 to November 2011.⁴⁸

The SEC has enjoyed increased success in bringing enforcement actions against high-frequency traders under §9(a)(2) after a slow start. At the beginning, shortly after the Flash Crash, SEC Chairwoman Mary Schapiro told Congress that her agency's "tools for collecting data and surveilling our markets are wholly inadequate."⁴⁹ However, it seems that the SEC is beginning to catch up the high-frequency traders. Now, the SEC is able to break down in detail the algorithms and trading strategies employed by the high-frequency traders it charges. This may be, in part, because of the new tools created to help the agency dissect market activity.⁵⁰ Most significantly, the underlying tools being developed in support of the Consolidated Audit Trail have enabled the SEC to track trading activity in a way it could not in 2010.⁵¹

The SEC's reliance on old principles to prosecute modern misdeeds is precisely what Congress intended when it wrote the Exchange Act's broad prohibitions against market manipulation. It is a credit to the SEC that it has recognized its tools and dedicated itself publicly to their use. As Daniel M. Hawke, Chief of the SEC Enforcement Division's Market Abuse Unit, stated, "The fairness principle that underlies the foundation of our markets demands that prices of securities accurately reflect a genuine supply of and demand for those securities".⁵² Robert Khuzami, Director of the SEC's Division of Enforcement, said in 2012, "Manipulation,

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ PATTERSON, *supra* note 4, at 63.

⁵⁰ *SEC Approves New Rule Requiring Consolidated Audit Trail to Monitor and Analyze Trading Activity*, SEC (July 11, 2012), http://www.sec.gov/News/PressRelease/Detail/PressRelease/1365171483188#.VNPO_S53HfY.

⁵¹ Consolidated Audit Trail, 77 Fed. Reg. 45722 (Aug. 1, 2012), *available at* <http://www.regulations.gov/#!documentDetail;D=SEC-2012-1244-0001>.

⁵² *Id.*

whether executed by e-mail, instant message, or multiple phantom orders, is still manipulation”.⁵³

The SEC should continue to reign in the excesses of high-frequency traders who use technological advantages to manipulate the markets. However, changes to the SEC’s approach to spoofing are necessary. The SEC should punish high-frequency traders who manipulate the market through spoofing with greater severity. A review of spoofing enforcement actions shows that punishments have been quite lenient. Executives who orchestrated spoofing scheme at Trade Alpha for at least a year after receiving warnings from FINRA were suspended for only 2 to 3 years as part of the settlement with the SEC.⁵⁴ Executives at Visionary Trading agreed to similar suspensions as part of their own settlement with the SEC.⁵⁵ Lower-level brokers within the organizations were not mentioned in the actions, let alone punished by the SEC.⁵⁶

More severe punishments for high-frequency traders who have engaged in spoofing schemes are warranted because spoofing is against each of the three mandates of the SEC. The manipulation of securities prices through spoofing undermines market integrity, harms investors who make honest investments in the securities markets by subjecting their holdings to manipulated values, and stifles capital formation by undermining confidence in the markets.⁵⁷ This all adds to the perception that the stock market is “rigged”.⁵⁸ Given the serious consequences of spoofing, I propose that those who engage in spoofing should face severe punishments including lifetime bans.⁵⁹ A lifetime ban from the securities industry has been used

⁵³ *Trade Alpha*, *supra* note 33.

⁵⁴ *Id.*

⁵⁵ *Visionary Trading*, *supra* note 43.

⁵⁶ *Id.*

⁵⁷ *The Investor’s Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, SEC, <http://www.sec.gov/about/whatwedo.shtml#.VNJTmi53Hfy> (last visited Mar. 13, 2015) [hereinafter *SEC Mandates*].

⁵⁸ See LEWIS, *supra* note 8.

⁵⁹ *Id.* at 104.

before in circumstances where common schemes shake public confidence in the securities markets.⁶⁰ The punishment seems appropriate for high-frequency traders who engage in spoofing in this era.⁶¹ Recently, SEC Chairwoman Mary Jo White has promised a more aggressive approach to prosecuting market manipulation.⁶² The next spoofing enforcement action would be a terrific place for White to show the securities market what that means.

B. Limit Order Types

A second proposal for curbing the power of high-frequency traders is to reduce or eliminate the special orders that are available to them. As early as the mid-1990s, the high-frequency trading firm Datek was using an algorithm to take advantage of exchange order rules.⁶³ As high-frequency traders have become necessary liquidity makers for the exchanges, they have used their new-found bargaining power to directly influence exchange order rules.⁶⁴ The exchanges realized that if they were going to survive in an ultra-competitive industry “they had to cater to...the firms that filled their pools with liquidity”.⁶⁵ High-frequency traders asked for special order types and “worked hand in hand with the trading networks to create exotic order types that would behave in very specific ways” that benefit them.⁶⁶

The order types created by exchanges in response to high-frequency trader demands are so numerous and complex that a special team of puzzle-solvers was hired by RBS to work

⁶⁰ *Securities Ban for Milken*, N.Y. TIMES (Mar. 19, 1991), <http://www.nytimes.com/1991/03/19/business/securities-ban-for-milken.html> (Describing Milken’s lifetime ban for being “part of Wall Street’s biggest scandal” during the junk bond era).

⁶¹ Joel Schectman, *SEC Commissioners Push Lifetime Bans on Executives*, WALL ST. J. (Feb. 26, 2015), <http://blogs.wsj.com/riskandcompliance/2015/02/26/sec-commissioners-push-lifetime-bans-on-executives/>.

⁶² *Mary Jo White, Deploying the Full Enforcement Arsenal*, SEC (Sept. 26, 2013), <http://www.sec.gov/News/Speech/Detail/Speech/1370539841202#.VQCd1eF3HfY>.

⁶³ PATTERSON, *supra* note 4, at 94.

⁶⁴ *Id.* at 41.

⁶⁵ *Id.* at 205.

⁶⁶ *Id.*

through them⁶⁷ The RBS team estimated that there were around 150 order types available to high-frequency traders.⁶⁸ However, the number of order types that have been created for HFTs has not yet been accurately counted. This is because high-frequency traders often combine trade types, meaning there are thousands of possible combinations..⁶⁹ And the number is growing. Despite the attention given to the issue, “order types are being created to attract predatory traders” today.⁷⁰

Not only are the order types too numerous to accurately count, exchange employees admit that they are “fiendishly complex”.⁷¹ Each order type is a detailed command. For example, exchange operator DirectEdge allowed for an order that would fill only at the limit price *and* only if the trade would collect the rebate for making liquidity for the exchange.⁷² Alternatively, the “hide-not-slide” order would tuck into an existing queue to make liquidity for the exchange, but only in the event that the supply of offered shares were exhausted.⁷³ It will hide, unseen by other market participants, until the conditions are exactly as expressed in the order.⁷⁴ Those who have waited in the queue visible to the public are shocked when the shares are snapped up by a previously hidden investor.

The practice of creating specialized order types for HFTs is widespread. A report prepared by Economists Gary Shorter and Rena Miller for Congress in 2014 noted that the NYSE, NASDAQ, BATS, and Direct Edge are all “reportedly involved in customizing order types

⁶⁷ LEWIS, *supra* note 8, at 169.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ PATTERSON, *supra* note 4, at 318.

⁷¹ *Id.* at 50.

⁷² LEWIS, *supra* note 8, at 169.

⁷³ *Id.* at 170.

⁷⁴ Scott Patterson & Jenny Strasburg, *How ‘Hide-not-Slide’ Orders Work*, WALL ST. J., Sept. 18, 2012, available at <http://www.wsj.com/articles/SB10000872396390444812704577605840263150860>.

to fit the needs of their HFT firm clients”.⁷⁵ Exchanges have responded to the claim by asserting that whatever order types they create are available to all clients.⁷⁶ However, traders have been upfront about the advantage they receive from the proliferation of order types. One high-frequency trader said, “What’s really essential is to jump to the head of the queue... You pay for it, but you jump to the lead”.⁷⁷ This violates the basic rule of stock exchanges that “the first investor to place an order at the best current price generally should be the one whose order is filled first.”⁷⁸

The ultimate problem caused by these exotic orders is that they allow high-frequency traders to have a unique advantage in understanding order management rules. Some of the rulemaking proposals filed with the SEC when exchanges sought to create new order types were 20 pages in length.⁷⁹ What’s more, the complex order types were created directly by or in partnership with the high-frequency traders who are going to use them. So high-frequency traders understand the language of the rules better than anyone else possibly could. This knowledge creates an informational advantage for high-frequency traders. Anytime an informational advantage appears to be systemic rather than ad hoc, a hard look should be given to whether it should be regulated against. This is because an informational advantage that is systemic is counter to all three SEC mandates.⁸⁰ It exposes investors to systematic losses, harms the image of a fair market, gives pause to those who consider investing in the capital markets, and ultimately hinders capital formation.

⁷⁵ Gary Shorter & Rena Miller, *High Frequency Trading: Background, Concerns, and Regulatory Developments*, CONGRESSIONAL RESEARCH SERVICE, June 19, 2014, at 22.

⁷⁶ *Id.*

⁷⁷ Laurie Carver, *Exchange Order Types Prompt Fears of HFT Conspiracy*, RISK MAGAZINE (April 23, 2013), <http://www.risk.net/risk-magazine/feature/2261626/exchange-order-types-prompt-fears-of-hft-conspiracy>.

⁷⁸ Patterson & Strasburg, *supra* note 72.

⁷⁹ LEWIS, *supra* note 8, at 170.

⁸⁰ *SEC Mandates*, *supra* note 55.

The informational advantage that high-frequency traders possess would be stifled, at least in part, if all professionals understood the newly created orders. Then, investors could depend on their brokers to educate and protect them. However, it is clear that few people inside the securities industry understand the order types. This is apparent from the difference between the number of order types available and the number of those taught to brokers. The NYSE, for example, offers 34 order types to traders.⁸¹ By contrast, FINRA, the self-regulatory organization for broker-dealers, only tests brokers on three order types and a handful of basic qualifiers as part of Series 7 licensing.⁸² The SEC itself only lists 9 order types and qualifiers on its website.⁸³ Brokers and their retail clients, as a result, only use a limited number of order types when placing trades.⁸⁴ The disparity between what retail investors and their brokers know and what the exchanges allow leaves retail investors wholly unprotected even when they partner with financial professionals.

The argument that exotic order types harm retail investors and the markets in which they trade is admittedly a difficult one to make. This is true not because it is a weak argument. Rather, it is true because it entails an explanation of many complex market orders that are really strings of logical if/then commands. It is difficult to comprehend how the individual orders work, let alone how they work in relation to other market participants. It is perhaps better to explain the effect of these order types on retail investors through analogizing to an everyday experience.

⁸¹ Shorter & Miller, *supra* note 73, at 23.

⁸² Investopedia, Series 7, <http://www.investopedia.com/exam-guide/series-7/securities-transactions/types-orders.asp> (last visited Feb. 4, 2015) [hereinafter *Series 7*].

⁸³ Order, SEC, www.sec.gov/answers/ordersbd.htm (last visited March 11, 2015).

⁸⁴ *Useful Brokerage Terms to Keep in Mind*, The Vanguard Group, <https://personal.vanguard.com/us/insights/saving-investing/useful-brokerage-terms> (last visited Mar. 13, 2015).

Suppose you decide to take your family to Tanglewood Park, just west of Winston-Salem, to enjoy the famous holiday light show. You know that the queue of cars will be long, so you call the park in advance to ask about traffic flow. You are told that there are three lines into the show. Each line accommodates a different type of attendee. One is for large groups in vans and buses. It goes through the back gate of the park. The second is for cars that purchased passes in advance. It goes through the front gate and moves quickly as gatekeepers wave cars displaying the passes through. The third line is for cars that have not purchased passes in advance. It typically moves at a slower, but unpredictable speed. Each line is monitored by the county sheriff's department.

You choose to buy a pass in advance for your car so that you can breeze through the front gate in the second line. When you join the line, it appears short. You congratulate yourself for planning so thoroughly. Then, three cars are directed by the sheriff's department to the front of the line. You ask the deputy standing nearby to explain what just happened. He shrugs. A few minutes later, ten cars are moved into line just behind the first car. You're moving back in line, not forward!

You don't remember seeing those ten cars move past you. You ask deputy to explain. He shrugs again. But things look up when eight of the cars that just joined the line leave to go through the nearby Starbucks drive-through. You advance in the line, but just as you approach the gate the eight cars come back from Starbucks and go back in front of you in line.

As the cars slip in front of you, you see a small gold badge on each car's windshield. You think this badge is the key to understanding the rules of the line...and your current misery. You ask a different deputy what the badge means. This one doesn't shrug. Instead, he tells you that it is a badge one can get for free, but only in-person from the park ranger. The badge lets

one slip in and out of line as he pleases. There's a silver badge too. The owners of silver badges can only use them on week nights after 9 PM. He begins to tell you about the platinum badge, but you roll the window up again as the line inches forward.

You watch for hours as cars with an array of brightly colored badges zip in and out of the line. You think that the park ranger who issues these badges can't possibly understand all the rules himself. As you finally drive through the open gate, hours after arriving, your spouse says, "Well, we know for next time". Shocked, you reply, "What makes you think I'm doing this again!?" That, in a nutshell, is the experience of traders in a stock market filled with exotic order types.

Despite the obvious effect of tilting the playing field in favor of select market participants, there has been only a limited effort to curb the creation of new order types for the benefit of high-frequency traders. Former high-frequency trader Haim Bodek observed in 2014 that exchanges "have been cleaning up their act, tweaking order type combinations to remove problems."⁸⁵ The limited effort has also been slow. Bodek expected the SEC and the exchange to eliminate all complex orders by the end of 2014, but many remain in use.⁸⁶

SEC continues to review the process by which order types are developed, approved, and monitored.⁸⁷ As the effort to reform order types move forward, there is justifiable concern that the case-by-case evaluation of exotic order types will lead to a new breed of even more vexatious special orders.⁸⁸ It has been observed by Economist Stephen Dubner that, "any time you change

⁸⁵ Carver, *supra* note 75.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ Nina Mehta, *SEC Second Guesses Trading Crusade as Market Makers Disappear*, BLOOMBERG (Sept. 13, 2010), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=amUfMuMGP9XM>.

a system, people will always change their behavior to maximize the benefit to themselves.”⁸⁹ Joe Saluzzi, co-head of equity trading for Themis Trading in New Jersey, believes that high-frequency traders will “threaten to leave one exchange for another if they do not get special advantages for their volume of transactions.”⁹⁰ They clearly have the leverage on exchanges. Saluzzi estimates that “high-frequency traders represent 70% of the volume of trading on most days, which exchanges rely on heavily for their fee generation.”⁹¹ Dubner warns that “Failing to figure out how people will react nearly always results in unintended, negative consequences.”⁹² Therefore, the SEC runs a tremendous risk of creating a race to bottom if it takes a case-by-case approach to the problem.

The more certain solution is to take away the entire field of order types as a space in which high-frequency traders can gain an advantage in the market. All order types that are not taught to brokers through FINRA licensing should be eliminated from national exchanges as quickly as possible.⁹³ By limiting the available order types to those FINRA-licensed brokers know, there will be no room for high-frequency traders to use special order types to outmaneuver retail investors and their representatives.

The SEC could use a formal rulemaking process to limit order types.⁹⁴ However, it might take months or years to finalize a formal legislative rule under the Administrative Procedure Act (APA).⁹⁵ Instead, the fastest way to bring about a sweeping change may be to bring a successful enforcement action against an exchange. This is a legitimate way for the SEC

⁸⁹ Stephen Dubner, *How Prevalent is Insider Trading? And What Can be Done About It?*, FREAKANOMICS (April 26, 2011), <http://freakonomics.com/2011/04/26/how-prevalent-is-insider-trading-and-whats-to-be-done-about-it-a-freakonomics-quorum/>

⁹⁰ Mehta, *supra* note 86.

⁹¹ *Id.*

⁹² Dubner, *supra* note 87.

⁹³ *Series 7*, *supra* note 80.

⁹⁴ 15 U.S.C. 3411 (2014).

⁹⁵ 5 U.S.C. 554, 556-557 (2014)

to bring about the change so long as the SEC brings the action under an existing statute.⁹⁶ We believe that 15 USC 78f(b)(5) may provide a firm basis for that action. That provision of the Exchange Act requires national securities exchanges to establish rules that “protect investors and the public interest” and “are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers”.⁹⁷

This oft overlooked section of the Exchange Act has been used in the past by the SEC in limited ways.⁹⁸ However, it may be time for the SEC to consider the section’s use as a basis for serious enforcement actions against national exchanges that allow high-frequency traders to write their own rules. The section stands for the proposition that recognition as a national exchange is a privilege held by few. In return, those exchanges are held to basic administrative and fairness standards. If those recognized exchanges choose to assist in the systematic abuse of ordinary investors and their representatives, then the SEC is within the letter and spirit of the section to bring an action.⁹⁹ In the age of increased competition between exchanges, there is no need for hesitancy on the SEC’s part.

C. Regulate Colocation

A third proposal for reducing the advantages enjoyed by high-frequency traders is to tighten the regulation of colocation to improve transparency and fairness. Colocation “refers to the practice of setting up your trading computers in the same physical building as the exchange’s

⁹⁶ See *NLRB v. Bell Aerospace*, 416 U.S. 267 (1974) (Holding that the decision of whether to act by litigation or rulemaking lies in the first instance with the agency empowered by the enabling statute).

⁹⁷ 15 U.S.C. 78f(b)(5) (2014).

⁹⁸ See *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Ware*, 414 U.S. 117, 128-129 (1973) (Describing the requiring of a national securities exchange and the SEC’s role in enforcing those requirements).

⁹⁹ For the “spirit” of the federal securities laws, refer to the works of former SEC Chairman and U.S. Supreme Court Chief Justice Douglas. Justice Douglas wrote that the idea of federal securities laws was that, “Government would keep the shotgun, so to speak, behind the door, loaded, well oiled, cleaned, ready for use but with the hope it would never have to be used.” WILLIAM DOUGLAS, *DEMOCRACY AND FINANCE* 82 (J. Allen ed. 1940).

computers, to get a time advantage over your competitors.”¹⁰⁰ In recent years, “exchanges and other market centers have opened new data centers or expanded existing ones to offer colocation services”.¹⁰¹ In fact, since 2007 the New York Stock Exchange has done most of its trading from Weehawken, New Jersey to accommodate colocation equipment.¹⁰² Despite the fact that it has been integrated into the market structure for years, colocation struck many as inherently unfair in the aftermath of the Flash Crash.¹⁰³

The reason that high-frequency traders want colocation is to get the ultimate speed advantage. For high-frequency traders, there are just three variables in the time it takes to execute an order: server box computing power, the speed of the algorithm employed by the trading software, and the length of lines used to connect the server box to the exchange.¹⁰⁴ As differences in server box computing power and algorithms diminished, the determinant variable became the length of the line from server boxes to the exchange.¹⁰⁵ Milliseconds became the difference between winning and losing fortunes. In response, exchanges began leasing special locations within their buildings.¹⁰⁶ From that time forward, colocation was generally unregulated.¹⁰⁷

¹⁰⁰ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 67 (2009) (Prepared Statement of Daniel Mathisson)*

¹⁰¹ Ivy Schmerken, *High-Frequency Trading Shops Play the Colocation Game*, ADVANCED TRADING (Oct. 5, 2009), <http://www.wallstreetandtech.com/trading-technology/high-frequency-trading-shops-play-the-colocation-game/d/d-id/1262506>.

¹⁰² PATTERSON, *supra* note 4, at 281-82.

¹⁰³ John McCain, <http://www.mccain.senate.gov/public/index.cfm/2014/6/opening-statement-by-senator-john-mccain-at-the-psi-hearing-on-high-frequency-trading> (last visited Feb 1, 2015).

¹⁰⁴ LEWIS, *supra* note 8, at 61.

¹⁰⁵ *Id.*

¹⁰⁶ PATTERSON, *supra* note 4, at 200.

¹⁰⁷ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 65 (2009) (Prepared Statement of Christopher Nagy).*

After the Flash Crash, a much harder look was taken at colocation and how it should be regulated. Of primary concern was whether colocation created unfair opportunities for a select group of firms who obtained special information under private agreements with the exchanges. If so, the question became whether the practice should be regulated or flatly prohibited by the SEC. Consensus has emerged in regard to both concerns. Somewhat surprisingly, there is broad agreement that colocation does not create an unfair advantage for a select few. There has also been broad agreement that regulation, not prohibition, is the appropriate response to colocation.

Industry insiders explained their views on colocation in a pivotal Senate hearing in 2009. Frank Hatheway of NASDAQ argued at that hearing that “you cannot stop people from striving for proximity, to be close to the exchange.”¹⁰⁸ Daniel Matthisson agreed, reminding Senators of the similarity between colocation and buying property adjacent to the New York Stock Exchange.¹⁰⁹ Instead of being just across the street and using teenage “runners” to speed orders from brokerage house to the exchange floor, high-frequency traders are renting spaces inside the exchange and using wires.¹¹⁰ “The closer a broker’s office was to the exchange, the faster they could execute an order, which was a major selling point for brokers.”¹¹¹ In other words, an advantage in speed due to location has always been part of the market dynamics. Colocation is simply the latest method of seeking that advantage.

Some argue that colocation is not just inevitable market evolution, but it offers real advantages for all investors. Larry Leibowitz, Group Executive Vice President and Head of U.S.

¹⁰⁸ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 61 (2009) (Prepared Statement of Frank Hatheway).*

¹⁰⁹ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 14 (2009) (Testimony of Daniel Mathisson).*

¹¹⁰ *Id.*

¹¹¹ *Id.*

Execution and Global Technology for the NYSE, testified that retail investors “benefit from utilization of colocation through tighter spreads, lower volatility, and deeper liquidity.”¹¹² They also benefit from lower operational costs for broker-dealers. A striking example is a comparison between owning a seat on the old NYSE floor and leasing a colocation space inside the new NYSE. A seat on the NYSE sold for \$3.25 Million in 2005.¹¹³ A decade later, in the age of colocation, exchanges are leasing space for server boxes for as little as \$2,000 per month.¹¹⁴ Not only are costs lower for the firms that have space at the exchange, but more firms can enjoy the advantages of close proximity. Given the tight price competition between brokers, retail investors can collect these benefits by simply “selecting a technology savvy broker-dealer to transact on their behalf.”¹¹⁵

Having established some consensus around the inevitability and general desirability of colocation, the question turns to features of colocation in need of greater regulatory oversight. Hatheway of NASDAQ assured the Senators that, “there are no issues” in relation to colocation.¹¹⁶ The firms, he said, “tend to be happy with what they have, the resources that [NASDAQ] makes available to them.”¹¹⁷ Further, “there is a space available if more people want to come into the data center.”¹¹⁸ Other industry insiders similarly assured the Senators that

¹¹² *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 97 (2009) (Prepared Statement of Larry Leibowitz).*

¹¹³ *New York Stock Exchange*, NEW WORLD ENCYCLOPEDIA, http://www.newworldencyclopedia.org/entry/New_York_Stock_Exchange (last visited Feb. 10, 2015).

¹¹⁴ Notice of Filing and Immediate Effectiveness of Proposed Rule Change Relating to Fees for Certain Co-location Services, 78 Fed. Reg. 3945 (Jan. 11, 2013), available at <http://www.sec.gov/rules/sro/nasdaq/2013/34-68624.pdf> [hereinafter *Colocation Rule*].

¹¹⁵ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 71 (2009) (Testimony of Daniel Mathisson)*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

“there is nothing unfair in colocation as long as the access is provided to all who desire it at a reasonable cost.”¹¹⁹

Not everyone agrees with NASDAQ’s conclusion that “there are no issues” simply because collocating clients tend to be satisfied with the service. Christopher Nagy, Managing Director of Order Routing Strategy at TD Ameritrade, testified, “while colocation improves speed of execution for all parties including individual investors, oversight on how the process is administered is non-existent.”¹²⁰ Robert Gasser of the Investment Technology Group opined before the Senate that the SEC did not have market-monitoring capabilities to monitor the colocation traders it needed to police.¹²¹ Whether that was true or not, it was clear that the SEC hadn’t actually been monitoring the practice.¹²²

In light of the SEC’s inattentiveness, some believed unregulated co-location was creating unbeatable advantage. In 2010, Jefferies Company commissioned a report investigating “the advantages high-frequency traders gain by collocating their computer servers next to exchanges and subscribing directly to market data feeds.”¹²³ The report concluded the 100- to 200-millisecond advantage obtained by high-frequency traders through colocation allowed for “almost risk-free arbitrage opportunities.”¹²⁴ Senator Kaufman of Delaware claimed that this

¹¹⁹ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 19 (2009) (Prepared Statement of Peter Driscoll).*

¹²⁰ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 67 (2009) (Prepared Statement of Christopher Nagy)*

¹²¹ *Id.*

¹²² *Id.*

¹²³ 156 Cong. Rec. S922 (March 2, 2010) (statement of Senator Kaufman), *available at* <http://congressional.proquest.com/congressional/docview/t17.d18.c5a232f3ee000098?accountid=14868>.

¹²⁴ *Id.*

sort of advantage had created a “two-tiered market” in which high-frequency traders always had the winning hand.¹²⁵

These cries of inequity, however, are not substantiated. The costs of colocation are quite reasonable, as space is leased for just a few thousand dollars per month.¹²⁶ The exchanges have also ensured that space is plentiful by obtaining or building new facilities.¹²⁷ Finally, any investor can do business with a collocated firm.¹²⁸ The only true concern raised is whether the oversight of colocation is such that the practice is like to remain fair and transparent as high-frequency traders push for every possible advantage.

The efforts to regulate colocation are a great example of the financial industry’s unique regulatory structure. The key to regulation of high-frequency trading is that “Many of the high-frequency firms are broker-dealers.”¹²⁹ Broker-dealers must also follow exchange rules to do business on their physical or electronic floors. The exchanges, under §19 of the Exchange Act of 1934, are self-regulatory bodies that report to the SEC.¹³⁰ Exchange rules are presented to the SEC. They are then subject to normal public notice and comment rulemaking procedures.¹³¹ Traditionally, the SEC has allowed exchanges to “police themselves with respect to ensuring that trading takes place fairly and honestly.”¹³² When the pressures of competition entice exchanges to shirk their self-regulatory responsibilities, however, the SEC can use its power as the regulator

¹²⁵ PATTERSON, *supra* note 4, at 255.

¹²⁶ *Colocation Rule*, *supra* note 112.

¹²⁷ PATTERSON, *supra* note 4, at 281-82.

¹²⁸ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 71 (2009) (Testimony of Daniel Mathisson).*

¹²⁹ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 42 (2009) (Testimony of Robert Gasser).*

¹³⁰ 15 U.S.C. 78s (2014).

¹³¹ 5 U.S.C. §§ 554, 556-557 (2014).

¹³² Jonathan Macey & Maureen O’Hara, *From Markets to Venues: Securities Regulation in an Evolving World*, 58 *Stan. L. Rev.* 563, 585 (2005).

of the exchanges to oversee rulemaking or bring enforcement actions when the exchanges violate rules.¹³³

In the case of colocation, the SEC elected to start by investigating the behavior of the exchanges that allowed the practice. The SEC's early actions indicated that the regulation of colocation "should start from a productive vantage point that, when well regulated, high-frequency trading and technology are generally healthy and positive."¹³⁴ Also, that "the principles of fair access and transparency must be applied" to the issue.¹³⁵ Having announced its intentions to "focus on ensuring that co-location services are offered consistent with the SEC's long-standing 'fair-access' requirements", the SEC was met with early cooperation from the exchanges.¹³⁶

Just before the Senate held a hearing related to high-frequency trading in October of 2009, "two major trading venues voluntarily accepted Commission oversight of their colocation plans."¹³⁷ Multiple exchanges thereafter engaged in public rulemaking with the SEC through notice and comment rulemaking.¹³⁸ Since then, there has been an ongoing partnership between the exchanges and the SEC to improve rules related to colocation. In fact, additional rulemaking

¹³³ See *NLRB v. Bell Aerospace*, 416 U.S. 267 (1974) (Holding that the decision of whether to act by litigation or rulemaking lies in the first instance with the agency empowered by the enabling statute).

¹³⁴ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs*, 111th Cong. 11 (2009) (Prepared Statement of William O'Brien).

¹³⁵ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs*, 111th Cong. 17 (2009) (Prepared Statement of Robert Gasser).

¹³⁶ *SEC Issues Concept Release on Equity Market Structure*, DAVIS POLK, <http://www.davispolk.com/SEC-Issues-Concept-Release-on-Equity-Market-Structure-01-19-2010/>.

¹³⁷ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs*, 111th Cong. 87 (2009) (Prepared Statement of Peter Driscoll).

¹³⁸ *Colocation Rule*, *supra* note 111.

was before the public as this paper was written.¹³⁹ However, where cooperation from the exchanges has not been substantial, the SEC has found an enforcement tool to compel exchanges to write and follow colocation rules.

The SEC brought an enforcement action against the NYSE and two affiliated exchanges in May 2014. The SEC asserted that the exchanges had violated §19(b) and §19(g) of the Securities Exchange Act of 1934.¹⁴⁰ The SEC found that the “NYSE provided co-location services to customers on disparate contractual terms without an exchange rule in effect that permitted and governed the provision of such services on a fair and equitable basis.”¹⁴¹ The New York Times reported that, “Among the more serious problems flagged by the SEC was NYSE’s failure to obtain approval to offer co-location services and its disparate pricing, which permitted some trading firms to pay less money than others to place their computer servers inside the exchange’s data centers.”¹⁴² The exchanges settled the charges for \$4.5 Million.¹⁴³ While the settlement seems relatively small, it sent “a message that the SEC will pursue all kinds of market structure violations.”¹⁴⁴ It also told investors that another possible source of unfair advantages for high-frequency traders was being eliminated.

The practice of colocation came under heavy fire after the Flash Crash. Some of the prominent members of the U.S. Senate called for its outright prohibition.¹⁴⁵ However, evidence showed that the practice was both normal and helpful to investors. Exchanges whose colocation

¹³⁹ Proposed Rule Changes: NASDAQ Stock Market LLC, 80 Fed. Reg. 3683 (Jan. 23, 2015), <http://www.regulations.gov/#!documentDetail;D=SEC-2015-0140-0001>.

¹⁴⁰ SEC Charges NYSE, NYSE ARCA, and NYSE MKT for Repeated Failures to Operate in Accordance With Exchange Rules, SEC (May 1, 2014), available at <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370541706507#.VNldqC53HfY>.

¹⁴¹ *Id.*

¹⁴² *New York Stock Exchange to pay \$4.5 Million to Settle SEC Charges*, N.Y. TIMES (May 1, 2014), <http://www.reuters.com/article/2014/05/01/us-nyse-sec-enforcement-idUSBREA400LA20140501>.

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *McCain Statement*, *supra* note 101.

practices were previously unregulated have voluntarily engaged the SEC in rulemaking. Where engagement was not adequate, the SEC brought an enforcement action against the oldest and most well-known exchange.¹⁴⁶ The calls to closely monitor collocation have not ceased in light of this progress.¹⁴⁷ Nor should they. The pressure of competition such that exchanges are invited to shirk their self-regulatory responsibilities. When they do so, the SEC should act quickly and aggressively.

Conclusion

In 1994, Attorney General Janet Reno led a Department of Justice investigation into the misdeeds of NASDAQ market makers.¹⁴⁸ After describing the ways in which market makers had abused their privileged positions to fleece investors, the SEC announced “that significant changes...are warranted.”¹⁴⁹ The changes wrought by that decision were probably of a different magnitude than the Attorney General or President Clinton imagined. Nearly two decades later, the Senior Vice President of NASDAQ, would testify that the decision, “greatly democratized the markets, ultimately taking control of price setting away from market makers and specialist and giving it to everyone who is interested in participating in the market.”¹⁵⁰

The Order Handling Rules created a financial market in which practically anyone could build an Electronic Computer Network (ECN), which serves as the functional equivalent of a stock exchange.¹⁵¹ Once the new ECNs were established, it was a frenzy to attract people to take the role of market makers or specialists. Competition from high-frequency traders lowered

¹⁴⁶ N.Y. TIMES, *supra* note 140.

¹⁴⁷ See Linette Lopez, *A Radical Proposal to Change the Stock Market Could Completely Kill High-Frequency Trading*, BUSINESS INSIDER, March 31, 2014, available at <http://www.businessinsider.com/michael-lewis-high-frequency-trading-and-frequent-batch-auctions-2014-3>.

¹⁴⁸ *Reno Statement*, *supra* note 10.

¹⁴⁹ PATTERSON, *supra* note 4, at 126.

¹⁵⁰ *Hearing on Dark Pools, Flash Orders, High-Frequency Trading, and Other Market Structure Issues, Subcommittee on Securities, Insurance, and Investment, Senate Committee on Banking, Housing, and Urban Affairs, 111th Cong. 9 (2009) (Prepared Statement of Frank Hatheway).*

¹⁵¹ PATTERSON, *supra* note 4, at 137.

spreads and “made the profitability of market makers an impossibility.”¹⁵² Just like that, the specialists and market makers who had served vital roles in the markets for over a hundred years were completely displaced. Into the role of liquidity makers “stepped the speed traders...the new market makers of the digital age.”¹⁵³

As high-frequency traders have assumed the functional role of market makers and specialists, they have done immense good by lowering the cost of trading for all investors. In a terrific bit of irony, they did so to the advantage of the same traders they thought they were abusing. High-frequency traders would sometimes claim that “a fund manager at Fidelity or Legg Mason was about the dumbest money on the planet.”¹⁵⁴ They assumed that the entity they made money trading with must be the big loser. The reality is very different.

What must be remembered in any discussion about high-frequency traders is the market structure as it was without them. Christie and Schultz demonstrated that spreads were kept at even eighths or \$0.25 per share by NASDAQ market makers.¹⁵⁵ Today, the “fast traders make money by picking up pennies and nickels on thousands of trades a day.”¹⁵⁶ What happened to that twenty-four cent spread is perhaps the most important consideration for those regulating high-frequency traders. If high-frequency traders have kept it for themselves, then today’s markets are no better than those of 1997. Wholesale changes would again be in order. If investors are keeping even some of that twenty-four cents, then the system is as desired, albeit with excesses to eliminate. Studies indicate that the lion’s share of the 24 cents per share is staying in the pocket of the so-called “dumb money”.¹⁵⁷ Although the maker-taker system does

¹⁵² *Id.* at 195.

¹⁵³ *Id.*

¹⁵⁴ PATTERSON, *supra* note 4, at 185.

¹⁵⁵ *Id.* at 102.

¹⁵⁶ *Id.* at 35.

¹⁵⁷ *Id.* at 185.

move some addition funds from “dumb money” to high-frequency traders, high-frequency trader profits are derived from 1 penny spreads.¹⁵⁸ Circumstantial evidence agrees with the empirical studies on the positive effects of high-frequency traders.

No one is more attuned to the cost implications of high-frequency traders than the institutional traders for whom “trading costs are a criminal determinant of performance.”¹⁵⁹ The rise of high-frequency trading has been such a boon for retail investors that The Vanguard Group, which eschews costs while representing millions of retail investors, told the SEC that, “regulatory changes and efficiencies produced by high-frequency firms reduced costs for long-term investors by about 0.5 percentage point over the last decade.”¹⁶⁰ When you multiply that over the \$3 Trillion that Vanguard alone manages, the savings are \$15 Billion. The savings to shorter-term investors is greater. A mutual fund returning 9 percent annually with a turnover of 100% would otherwise see its gains cut to 8 percent.¹⁶¹ Mark Gorton of Tower Research estimates that, “Both large and small investors are saving billions of dollars every year due to the new electronic market structure and high-frequency trading.”¹⁶²

What has been forgotten, or perhaps never learned, by the high-frequency traders is at whose urging they were given their current roles. It was institutional investors who wanted them as intermediaries. In fact, the savings to be realized by retail investors and the institutions that represent them were a driving force behind inserting competition into the markets.¹⁶³ The only representative to testify in a hearing about the effects of decimalization of quotes and increased

¹⁵⁸ Albert Menkveld, *High Frequency Traders and the New-Market Makers*, 16 J. of Fin. Markets 1 (2013).

¹⁵⁹ Lin Tong, *A Blessing or A Curse? The Impact of High Frequency Trading on Institutional Investors* 1 (European Finance Ass’n Annual Meetings 2014 Paper Series), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330053.

¹⁶⁰ Mehta, *supra* note 86.

¹⁶¹ *Id.*

¹⁶² Phil Albinus, *The HFT Believer*, TRADERS MAGAZINE (Feb. 25, 2015), <http://www.tradersmagazine.com/news/people/the-hft-believer-mark-gorton-defends-hft-113515-1.html>.

¹⁶³ *Hearing Before the Subcommittee on Finance and Hazardous Materials of the Committee on Commerce House of Representatives*, 105th Cong. 39 (1997) (Testimony of Harold Bradley).

competition in the market making function voiced “strong support” for the measures. If any doubt could remain about his understanding of the issues, Bradley said, “A move to decimals alone will be an empty gesture to investors if exchange...preserve inefficient intermediaries and perpetuate high cost access for investors.”¹⁶⁴ It was as clear 20 years ago as it is now – high-frequency traders competing against one another for penny spreads serve the interests of institutional traders and their retail clients. Michael Lewis’ concern that ordinary investors are losing a couple of billion dollars a year to high-frequency traders is laughably short-sighted.¹⁶⁵

We must recognize that high-frequency traders are useful idiots in the financial markets, oblivious to the role they play and the benefits they have delivered. This is not the extent of the discussion, however. The Flash Crash has indeed cast a light on these previously unacknowledged players in the financial markets. Although the current market structure is still delivering value for investors, it is healthy to check certain practices for excess. This paper has taken a hard look at three particular practices of high-frequency traders that have been scrutinized after the Flash Crash: manipulation through spoofing, using specialized order types, and colocation.

In the case of spoofing, the SEC has determined that high-frequency traders have abused their technological advantage role as liquidity makers in the market to manipulate equity prices. In response, the SEC has utilized the long-standing anti-manipulation rule in §9(a)(2) of the Exchange Act to bring enforcement actions against high-frequency traders. Through these enforcement actions, the SEC has been able to fine several traders and suspend others from the securities industry.¹⁶⁶ Recent efforts demonstrate that the SEC, armed with the analytical tools

¹⁶⁴ *Id.* at 42.

¹⁶⁵ LEWIS, *supra* note 8, at 229.

¹⁶⁶ *Trade Alpha*, *supra* note 33.

associated with Consolidated Audit Trail, may be catching up to high-frequency traders they regulate.¹⁶⁷

The SEC has been less successful in curbing the use of specialized order types. These order types, which are not understood by many professionals or their retail clients, pose a hazard for investors. They can no longer be certain of the rules of the road. As it stands today, the attention that has been given to the issue is slowing the production of order types.¹⁶⁸ However, growth continues where a reduction is essential.¹⁶⁹ It would be wise for the SEC to propose rules now for simple, standardized orders across platforms in-line with the SEC's mandate. If it find cooperation slow, the SEC has incredible power to end discriminatory and manipulative practices by the exchanges under §6(b)(5) of the Exchange Act.

Finally, the SEC has been asked to examine the practice of colocation by high-frequency trading firms. The agency has found broad consensus that colocation, although it can be cast in the worst of lights, is the latest evolutionary chain in an age-old practice. Convinced that colocation in itself is a neutral or positive effect on the market, the SEC has focused on fair access and transparency. So far, its efforts have been met with cooperation by the major exchanges.¹⁷⁰ Only once has the SEC felt forced to bring an enforcement action against an exchange.¹⁷¹ The SEC should remain vigilant in its pursuit of transparency and fairness in colocation, bringing enforcement actions whenever necessary.¹⁷²

¹⁶⁷ Consolidated Audit Trail, 77 Fed. Reg. 45722 (Aug. 1, 2012), <http://www.regulations.gov/#!documentDetail;D=SEC-2012-1244-0001>.

¹⁶⁸ Carver, *supra* note 75.

¹⁶⁹ PATTERSON, *supra* note 4, at 318.

¹⁷⁰ Davis Polk, *supra* note 134.

¹⁷¹ *SEC Charges NYSE, NYSE ARCA, and NYSE MKT for Repeated Failures to Operate in Accordance With Exchange Rules*, SEC, May 1, 2014, available at <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370541706507#.VNIdqC53HfY>

¹⁷² See Kosmos, *supra* note 2, at 529 (Arguing that any regulatory scheme should be carefully designed to maintain the benefits that high-frequency traders create for investors and the markets generally.).

Currently, investors enjoy “the most leveled playing field ever” in the securities market.¹⁷³ This is, in part, due to the competition that has been fostered between high-frequency traders who deliver low cost trading and high liquidity.¹⁷⁴ As the role of high-frequency traders in the market structure continues to evolve, a close watch must be kept over their practices. High-frequency traders, like the market makers and specialists they replaced, must be regulated because they are key players in a well-organized market.¹⁷⁵ This entails constantly reassessing the bargain that was made in 1997. While the bargain struck gave high-frequency traders the ability to capture the new, narrower spreads, there is evidence that the distributions of benefits has shifted in favor of high-frequency traders in recent years.¹⁷⁶ Wherever high-frequency traders take excessive benefits from their position within the markets, the SEC should act forcefully. It can begin by implementing the three proposals set forth in this paper.

¹⁷³ *Albinus*, *supra* note 160.

¹⁷⁴ *Id.*

¹⁷⁵ See George Simon & Kathryn Trkla, *The Regulation of Specialists and Implications for the Future*, 61 *Bus. Law* 217 (2005) (Describing the regular monitoring of market makers and specialists since the 1930s).

¹⁷⁶ See Tong, *supra* note 156 (Describing attempts by high-frequency traders to capture profits on price through order anticipation as well as bid-ask spreads).