April 2018

Securities Fraud Embedded in the Market Structure Crisis: High-Frequency Traders as Primary Violators

Stanislav Dolgopolov

SECURITIES FRAUD EMBEDDED IN THE MARKET STRUCTURE CRISIS: HIGH-FREQUENCY TRADERS AS PRIMARY VIOLATORS

STANISLAV DOLGOPOLOV*

ABSTRACT

This Article analyzes approaches to attaching liability for securities fraud to high-frequency traders as primary violators in connection with the current market structure crisis. One of the manifestations of this crisis pertains to inadequate disclosure of advanced functionalities offered by trading venues, as exemplified by the order type controversy. The Article's analysis is applied to secret arrangements between trading venues and preferred traders, glitches and gaming, and the reach of the doctrine of market manipulation, and several relevant issues are also viewed from the standpoint of the integrity of the trading process. The Article concludes by arguing for a balanced approach to catching certain problematic practices of high-frequency traders as securities fraud.

TABLE OF CONTENTS

INTRODUCTION

The phenomenon of high-frequency trading ("HFT"), one of the pivotal ingredients of the current market structure crisis, has captivated the public eye, while becoming a key regulatory and legal issue.[1] Given the importance of this phenomenon, high-frequency traders ("HFTs") need to be evaluated as potential targets in enforcement actions or private lawsuits for engaging in securities fraud, with the federal antifraud prohibition being embodied by Section 10(b) of the Securities Exchange Act of 1934 (Exchange Act) and the corresponding Rule 10b-5 promulgated by the U.S. Securities and Exchange Commission (SEC).[2] Surprisingly, HFTs have been largely absent from the ranks of parties held liable for securities fraud, despite being referenced under such monikers as "Trading Firm A" and "Trading Firm B" in prominent enforcement actions against other parties.[3] Moreover, while a blockbuster class action lawsuit backed away from suing HFTs for securities fraud,[4] perhaps anticipating serious difficulties with

---

[1] For an extensive discussion of HFT in connection with the current market structure crisis and related regulatory and legal developments, see HAIM BODEK & STANISLAV DOLGOPOLOV, THE MARKET STRUCTURE CRISIS: ELECTRONIC STOCK MARKETS, HIGH FREQUENCY TRADING, AND DARK POOLS (2015).

[2] Rule 10b-5, which is the primary weapon of private litigants in contrast to other antifraud provisions of the federal securities statutes and corresponding rules, has been famously described as "a judicial oak which has grown from little more than a legislative acorn." Blue Chip Stamps v. Manor Drug Stores, 421 U.S. 723, 737 (1975). In addition to this rule, the regulators may resort to different antifraud provisions for a specific reason: "[T]he SEC can reach most of the conduct covered by Rule 10b-5 under section 17(a) of the Securities Act [of 1933] without proving scienter." Steve Thel, *Taking Section 10(b) Seriously: Criminal Enforcement of SEC Rules*, 2014 COLUM. BUS. L. REV. 1, 39 (2014).

[3] This example is taken from the recent enforcement action against Direct Edge's two securities exchanges in connection with their order type-related practices. EDGA Exch. Inc., Exchange Act Release No. 74,032 (Jan. 12, 2015) (settled proceeding), http://www.sec.gov/litigation/admin/2015/34-74032.pdf [https://perma.cc/QD2L-CXBL]. While this action was largely based on the failure to follow proper rulemaking procedures rather than securities fraud, the crux of the matter was in insufficient disclosure, and, as described in the settlement, these two unnamed HFT firms were actively involved in designing specific order types that essentially amounted to secret arrangements with these exchanges. *Id. passim*.

[4] *Compare* Complaint for Violation of the Federal Securities Laws para. 2, at 1, City of Providence v. BATS Global Mkts., Inc., No. 1:14-cv-2811 (S.D.N.Y.

mounting an attack on this category of market participants or seeing direct charges as a distraction, it still persisted with finger-pointing at HFTs as unnamed violators: "Defendants wrongfully engaged in various fraudulent conduct and/or participated in such conduct by others ... including electronic front running, latency arbitrage, rebate arbitrage, spoofing, and layering."[5]

If anything, the availability of a private right of action to catch HFTs is critical for a number of reasons. For instance, securities exchanges, an important category of gatekeepers, are often sheltered from private lawsuits alleging securities fraud as self-regulatory organizations ("SROs") by the rather expansive—but now contracting—doctrine of regulatory immunity.[6] Moreover,

Apr. 18, 2014) (maintaining that "a defendant class of sophisticated high frequency trading ... firms," along with other defendants, such as securities exchanges and brokerage firms, "employed devices, contrivances, manipulations and artifices to defraud in a manner that was designed to and did manipulate the U.S. securities markets and the trading of equities on those markets, diverting billions of dollars annually from buyers and sellers of securities to themselves"), *with* Second Consolidated Amended Complaint for Violation of the Federal Securities Laws *passim*, City of Providence v. BATS Global Mkts., Inc., No. 1:14-cv-02811-JMF (S.D.N.Y. Nov. 24, 2014) [hereinafter Second Consolidated Amended Complaint, City of Providence v. BATS Global Mkts., Inc.] (confining the lawsuit's defendants to a group of securities exchanges and one dark pool operator). Although dismissed by the federal district court, this class action lawsuit was resurrected as stating a sufficient legal claim. *In re* Barclays Liquidity Cross & High Frequency Trading Litig., 126 F. Supp. 3d 342 (S.D.N.Y. 2015), *aff'd in part, rev'd in part sub nom.* City of Providence v. BATS Global Mkts., Inc., 878 F.3d 36 (2d Cir. 2017).

[5] Second Consolidated Amended Complaint, City of Providence v. BATS Global Mkts., Inc., *supra* note 4, para. 297, at 135.

[6] In a leading case dealing with liability of securities exchanges for HFT-related practices, the federal district court ruled that providing private data feeds and complex order types were immune activities, while colocation services were not. *In re Barclays Liquidity Cross*, 126 F. Supp. 3d at 356–60. In its turn, the Second Circuit ruled that regulatory immunity does not apply when "an exchange engages in conduct to operate its own market that is distinct from its oversight role" and maintained that "the exchanges, in providing these [three types of] challenged products and services, did not 'effectively stand in the shoes of the SEC' and therefore are not entitled to the same protections of immunity that would otherwise be afforded to the SEC." *City of Providence*, 878 F.3d at 48 (quoting DL Capital Grp., LLC v. NASDAQ Stock Mkt., Inc., 409 F.3d 93, 95 (2d Cir. 2005)). The SEC also provided a reevaluation of the scope of regulatory immunity in its brief, although this analysis was not utilized by the Second Circuit. *Id.* at 47 n.4, 50 n.5. However, the regulatory agency maintained, quite similarly, that "immunity does not properly extend

other types of players are not immune in this area. For instance, certain non-exchange trading venues, meaning alternative trading systems ("ATSs") that may take the form of dark pools or electronic communication networks ("ECNs"), have proven to be vulnerable to allegations of securities fraud.[7] Likewise, private lawsuits based on such allegations against agency brokerage firms, including the giants among retail brokerages, in connection with breaches of the duty of best execution and payment for order flow and maker-taker arrangements are gaining momentum.[8]

---

to functions performed by an exchange itself in the operation of its own market, or to the sale of products and services arising out of those functions—like the challenged activities at the center of the plaintiffs' allegations," i.e., colocation services, private data feeds, and complex order types, and furthermore argued that this doctrine should be confined to "the realm of member regulation." Brief of the Securities and Exchange Commission, *Amicus Curiae* at 3, 24, City of Providence v. BATS Global Mkts., Inc., No. 15-3057 (2d Cir. Nov. 28, 2016), https://www.sec.gov/litigation/briefs/2016/providence-bats-global-markets -1116.pdf [https://perma.cc/JFR8-Y3YS]. As a related observation, the fusion of trading venues' private regulatory regimes and specialized products raises the issue of whether it is truly possible to opt out of *any* product among private data feeds, colocation services, and complex order types and still pursue a large subset of trading strategies, whether one is an HFT firm engaging in proprietary trading or an agency brokerage firm. For a sample of other recent cases addressing the issue of regulatory immunity of securities exchanges, see Rabin v. NASDAQ OMX PHLX LLC, 182 F. Supp. 3d 220 (E.D. Pa. 2016), *aff'd*, No. 16-2511, 2017 U.S. App. LEXIS 21093 (3d Cir. Oct. 25, 2017); Huntley v. Chi. Bd. of Options Exch., 161 F. Supp. 3d 612 (N.D. Ill. 2015); *In re* Facebook Inc., Sec. & Derivatives Litig., 986 F. Supp. 2d 428 (S.D.N.Y. 2013).

[7] For instance, one class action lawsuit against a dark pool for securities fraud under Section 10(b) of the Exchange Act and Rule 10b-5 has already passed several procedural hurdles, although this controversy dealt with disclosure-based claims of the parent company's shareholders rather than claims of that trading venue's customers. Strougo v. Barclays PLC, 105 F. Supp. 3d 330 (S.D.N.Y. 2015), *class cert. granted*, 312 F.R.D. 307 (S.D.N.Y. 2016), *aff'd sub nom.* Waggoner v. Barclays PLC, 875 F.3d 79 (2d Cir. 2017). Moreover, an ECN was recently penalized for securities fraud under Section 17(a)(2) of the Securities Act of 1933, which was also based on disclosure-based claims. Credit Suisse Sec. (USA) LLC, Securities Act Release No. 10,014, Exchange Act Release No. 77,003, at 2 (Jan. 31, 2016) (settled proceeding), https:// www.sec.gov/litigation/admin/2016/33-10014.pdf [https://perma.cc/3AXC-QB2A].

[8] Notably, the lawsuits against Charles Schwab and TD Ameritrade have passed the motion to dismiss hurdle. Crago v. Charles Schwab & Co., No. 16-cv-03938-RS, 2017 U.S. Dist. LEXIS 215871 (N.D. Cal. Dec. 5, 2017); Zola v. TD Ameritrade, Inc., 172 F. Supp. 3d 1055 (D. Neb. 2016). However, a similar lawsuit against another large retail brokerage firm, E*Trade, did not pass

A starting point is that many forms of HFT are in no way illegal, as they represent, in addition to specialization and expertise of these market participants, the modern iteration of time, place, and information advantages in a fragmented architecture of securities markets. For instance, as observed by two commentators, including the author,

> Overall, it is very problematic, if not futile, to outlaw such trading strategies [such as "order anticipation"/"liquidity detection" based on public information] and their latest incarnation, "stepping ahead," but some manifestations of this phenomenon may be addressed through regulatory and market-based means, such as speed bumps, oversight of data feed latency, or venue-specific policing for "aggressive" trading.[9]

More generally, an adverse effect of certain trading strategies on other market participants in the zero-sum game of short-term trading does not automatically equate to fraudulent conduct. Moreover, it is often touted that HFTs have no clients and hence cannot abuse the latter's orders.[10] On the other hand, the principal-only model does not apply to every firm in this segment, as several key players perform an agency function by virtue of being off-exchange market makers that *handle* other broker-dealers' order flow.[11] Notably, in one of the most recent enforcement actions—which still is a true outlier so far—Citadel, a leading HFT, was penalized based on allegations of securities fraud under Section 17(a)(2) of the Securities Act of 1933 for its off-exchange market making activities in connection with the utilization of discrepancies between

---

that hurdle in the federal district court. Schwab v. E*TRADE Fin. Corp., No. 16-cv-05891(JGK), 2018 U.S. Dist. LEXIS 9844 (S.D.N.Y. Jan. 20, 2018).

[9] BODEK & DOLGOPOLOV, *supra* note 1, at 93.

[10] *See, e.g.*, Rishi K. Narang, *High-Frequency Traders Can't Front-Run Anyone*, CNBC (Apr. 3, 2014), http://www.cnbc.com/2014/04/03/high-frequency-traders -cant-front-run-anyonecommentary.html [https://perma.cc/WET7-3YYD] ("HFTs never know what a customer's order is before it's in the market. HFTs have no customers. HFTs cannot front-run anyone.").

[11] For an extensive discussion of the agency function of off-exchange market makers performed in certain situations and the application of the duty of best execution to these market participants, as well as the securities fraud perspective on this duty, see Stanislav Dolgopolov, *Wholesaling Best Execution: How Entangled Are Off-Exchange Market Makers?*, 11 VA. L. & BUS. REV. 149 (2016).

the consolidated and private data feeds.[12] Interestingly, while the doctrine of market manipulation as a form of securities fraud has a broad reach, this charge is essentially missing, at least in securities markets, for larger players in the HFT segment, as opposed to the typical scenario of a "point-and-click" trader often aided by some automated tool.[13]

---

[12] Citadel Sec. LLC, Securities Act Release No. 10,280, Exchange Act Release No. 79,790 (Jan. 13, 2017) (settled proceeding), https://www.sec.gov /litigation/admin/2017/33-10280.pdf [https://perma.cc/LY6A-N3WV]. On the other hand, this enforcement action was based on the existence of affirmative misrepresentations, which were made by Citadel as a de facto stand-alone trading venue, rather than breaches of the duty of best execution. The regulators also observed that "the order often received price improvement, but this amount often was not sufficient to equal the price difference that had triggered the [underlying] strategy," which utilized discrepancies between the consolidated and private data feeds. *Id.* at 8. In turn, this observation raises the issue about the accuracy of price improvement statistics reported by off-exchange market makers. Another key observation from the settlement is the existence of built-in execution delays through a de facto conversion of marketable orders into nonmarketable orders, which, despite being sometimes advantageous to some orders, led to a subset of orders "receiv[ing] a price that was worse than they would have received" in the scenario of immediate execution. *Id.* at 9–10. For the author's expanded analysis of this settlement, see Stanislav Dolgopolov, *The Citadel Settlement, Off-Exchange Market Makers, and Giant Brokerages*, THE CLS BLUE SKY BLOG (May 5, 2017), http://cls bluesky.law.columbia.edu/2017/05/05/the-citadel-settlement-off-exchange-mar ket-makers-and-giant-brokerages [https://perma.cc/6QDT-UKY3].

[13] One example is represented by traders at a small firm who engaged in "manipulative trading known as 'spoofing' to collect [liquidity] rebates," which was based on the usage of undisplayed order types and the lack of cancellation fee for "customer" orders. Behruz Afshar, Securities Act Release No. 10,094, Exchange Act Release No. 78,043, Investment Company Act Release No. 32,144, at 3, 12–16 (June 13, 2016) (settled proceeding), https://www.sec .gov/litigation/admin/2016/33-10094.pdf [https://perma.cc/TH8B-RNEB]. Another recent example involved "a day-trading firm [relying on] mostly foreign traders in Eastern Europe and Asia to conduct its trading" that allegedly "engag[ed] in a manipulative trading strategy typically referred to as 'layering' or 'spoofing'." Complaint at 6, 11, SEC v. Lek Sec. Corp., No. 1:17-cv-01789-DLC (S.D.N.Y. Mar. 10, 2017), https://www.sec.gov/litigation/complaints/2017 /comp-pr2017-63.pdf [https://perma.cc/3HTU-47Z9]. Interestingly, there have been instances in which manual traders had aimed to take advantage of certain algorithms, as illustrated by manipulative trading strategies that "the algorithms misinterpreted as reflecting sincere demand." Hold Bros. On-Line Inv. Servs., LLC, Exchange Act Release No. 67,924, Investment Company Act

However, time, place, and information advantages, which, in some form, are unavoidable, are only one part of the real story relevant for the purposes of identifying securities fraud. The phenomenon of "plumbing" has to be considered as well: "[T]he arsenal of HFT has included numerous and often nontransparent market structure shortcuts, as contrasted to true quantitative models, effectively allowing [such traders] to anticipate and respond to price moves."[14] The gamut of such shortcuts is indeed broad, and, oftentimes, selective disclosure of information by trading venues to preferred market participants has been involved:

> Features under the umbrella of plumbing may rely on tiered fees and rebates under the maker-taker pricing model, special order type advantages, fragmentation exploitation (e.g., jockeying for top-of-queue in order to trade or collect a rebate), market structure arbitrage, and de facto side-stepping the ban on locked and crossed markets and the trade-through rule established by Regulation NMS. Overall, the existing regulatory framework, notably Regulation NMS, has been gamed by some HFTs and trading venues by: (i) exploiting regulatory loopholes and clever work-arounds, (ii) exploiting rule contradictions and unintended consequences, (iii) exploiting weakness in regulatory constraints resulting from implementation and / or latency, (iv) exploiting liberal interpretation of grey areas and / or utilizing exceptions for purposes other than the original intent, (v) exploiting undocumented or unanticipated features, and (vi) exploiting exchange membership status with regard to regulatory liability and eligibility for regulatory exceptions.[15]

But perhaps it should not be surprising that bad actors in the HFT segment are hard to catch at least through the means of private lawsuits. Under Section 10(b) of the Exchange Act and Rule 10b-5, a private right of action reaches only primary, but not secondary, violators, although the former may come in a variety of forms.[16] In light of trading venues' inadequate disclosures

---

Release No. 30,213, at 5 (Sept. 25, 2012) (settled proceeding), https://www.sec.gov/litigation/admin/2012/34-67924.pdf [https://perma.cc/P2HK-XH5P].

[14] Stanislav Dolgopolov, *Regulating Merchants of Liquidity: Market Making from Crowded Floors to High-Frequency Trading*, 18 U. PA. J. BUS. L. 651, 701 (2016).

[15] BODEK & DOLGOPOLOV, *supra* note 1, at 54–55.

[16] As observed in a key judicial opinion, "Secondary actors are subject to criminal penalties and civil enforcement by the SEC ... All secondary actors,

that enable questionable trading practices, the role played by HFTs may appear to be secondary from a doctrinal viewpoint.[17] More generally, HFTs may look like—and, in many instances, objectively are—just skillful beneficiaries courted by trading venues in a cutthroat environment created by the modern electronic marketplace. Moreover, another important scenario of frictions and imperfections in trading venues' protocols does not involve collusion, but is rather based on utilizing "glitches," which makes such HFTs look even less culpable. But this paradigm should not result in a blanket immunity, and a fresh perspective and an objective reevaluation of existing HFT practices from the standpoint of securities fraud is very much needed in order to identify, penalize, and deter wrongful conduct.

Accordingly, this Article analyzes approaches to attaching liability for securities fraud to HFTs as primary violators in connection with the current market structure crisis. One of the manifestations of this crisis pertains to inadequate disclosure of advanced functionalities offered by trading venues, as exemplified by the order type controversy. The Article's analysis is applied to secret arrangements between trading venues and preferred traders, glitches and gaming, and the reach of the doctrine of market manipulation, and several relevant issues are also viewed from the standpoint of the integrity of the trading process. The Article concludes by arguing for a balanced approach to catching certain problematic practices of HFTs as securities fraud.

---

furthermore, are not necessarily immune from private suit ... [T]he implied right of action in § 10(b) [of the Exchange Act] continues to cover secondary actors who commit primary violations." Stoneridge Inv. Partners, LLC v. Sci.-Atlanta, Inc., 552 U.S. 148, 166 (2008) (citation omitted).

[17] An important recent case, while addressing private claims against *trading venues* in connection with HFT practices rather than HFTs themselves, reminded that "Section 10(b) and Rule 10b-5 create liability only for primary violations of those provisions; there is no liability for aiding and abetting another's violation." *In re* Barclays Liquidity Cross & High Frequency Trading Litig., 126 F. Supp. 3d 342, 364 (S.D.N.Y. 2015). However, in its appellate iteration, the same case maintained that the plaintiffs had presented a sufficient legal allegation that "the exchanges were co-participants with HFT firms in the manipulative scheme and profited by that scheme" as primary violators. City of Providence v. BATS Global Mkts., Inc., 878 F.3d 36, 50–51 (2d Cir. 2017). Importantly, this statement also points in the direction of the feasibility of liability of HFTs as primary violators at least in the context of this allegation.

I. Advanced Functionalities Offered by Trading Venues and the Order Type Controversy

Trading protocols govern the interaction of orders, such as setting matching procedures, queue priority, price anchors and other indicators, rebate-fee structures, and order visibility. While there is a hierarchy of rules, starting with the Exchange Act itself and various SEC regulations, the specifics of the trading process are largely determined by individual trading venues, SROs and non-SROs alike. The dominance of advanced functionalities characterizes the ever-increasing complexity of trading protocols offered by the evolving gamut of lit and dark venues, with some features merely replicating the preelectronic environment and others going far beyond it.

The process of automation—accompanied by the rise of advanced functionalities—has not unambiguously simplified the marketplace of yesterday dominated by manual procedures with its uncertainty about human interaction. Concerns about complexity are on the forefront: "The matching rules, e.g., definitions of order types and triggers for transitions into volatility auctions, define how the venue *transitions* between states. ... The structure of a financial algorithm's state space can be incredibly complex."[18] The problem of complexity is compounded by the very process of describing trading rules to regulatory agencies—for instance, in the process of regulatory review and approval—and market participants themselves:

> A significant challenge for regulators (and those trading on exchanges) is that the documentation and marketing material given to them is often imprecise. It is commonly expressed in English prose, an obviously deficient way to communicate complicated mathematical objects. English descriptions of algorithms lead to ambiguity and open up opportunities for "liberal" interpretations.[19]

Indeed, the very existence of such gray areas creates some room for both unintended and deliberate informational advantages.

---

[18] DENIS A. IGNATOVICH & GRANT O. PASSMORE, AESTHETIC INTEGRATION LTD., TRANSPARENT ORDER PRIORITY AND PRICING 3 (2015), https://www.imandra.ai/transparent-order-priority-and-pricing [https://perma.cc/5YHA-HWB8].

[19] *Id.* at 5.

With these developments in mind, the so-called order type controversy is symptomatic of many advantages occurring in the modern market structure in connection with informational asymmetries in advanced functionalities, which may range from merely undocumented gray areas to discrepancies with formal documentation that constitute direct contradictions.[20] The basic taxonomy of order type-related abuses has been described as follows:

- unfair order handling practices that permit HFTs to step ahead of investor orders in violation of price-time priority
- unfair rebooking and repositioning of investor orders that permit HFTs to flip out of toxic trades
- unfair conversion of investor orders eligible for maker rebates into unfavorable executions incurring taker fees
- unfair insertion of HFT intermediaries in between legitimate customer-to-customer matching
- unfair and discriminatory order handling of investor orders during sudden price movements.[21]

Moreover, even some major institutional investors have openly acknowledged the adverse impact of certain order types,[22] although this perspective might cast some unfavorable light on this group for not using such order types more widely.

---

[20] Haim Bodek is rightfully credited with bringing the order type controversy to light. For his discussion of this controversy in the context of HFT, see HAIM BODEK, THE PROBLEM OF HFT: COLLECTED WRITINGS ON HIGH FREQUENCY TRADING & STOCK MARKET STRUCTURE REFORM (2013).

[21] *Id.* at 11–12.

[22] *See, e.g.*, *High Frequency Trading's Impact on the Economy: Hearing Before the Subcomm. on Sec., Ins., & Inv. of the S. Comm. on Banking, Hous., & Urban Affairs*, 113th Cong. 69–70 (2014) (prepared statement of Andrew M. Brooks, Vice President and Head of U.S. Equity Trading, T. Rowe Price Associates, Inc.), https://www.gpo.gov/fdsys/pkg/CHRG-113shrg91299/pdf/CHRG-113shrg 91299.pdf [https://perma.cc/BY6F-YRKQ] ("[I]n the race for increased market share, exchanges and alternative trading venues continue to offer various types of orders to compete for investor order flow. Many of these order types facilitate strategies that can benefit certain market participants at the expense of long-term investors and, while seemingly appropriate, often such order types are used in connection with predatory trading strategies.").

However, "unfair" does not necessarily translate to "illegal." In fact, the defining feature of the order type controversy is the existence of informational asymmetries combined with selective disclosure by trading venues to preferred market participants, as opposed to just disparities in market participants' respective abilities to utilize certain order types. HFTs have not been just "better" at communicating with trading venues in a manner available to every interested party and investing time and effort to study the relevant documentation—in fact, individual firms have played a direct role in crafting specific order types. As this process has been described from a trading venue's perspective, "We created all these different order types to accommodate how [some market participants] wanted to trade. We tweaked how the order would interact with our book according to what they wanted. A lot of the unique orders were created at the request of a customer, typically a high frequency customer."[23]

The extent of informational asymmetries is illustrated by the following detailed list of undocumented features:

    a. precedence rules that advantage HFT order types over others (including conditions where price-time priority corruption occurs, and conditions where certain order type priority is firm, though other order types are "re-posted" with new booking times);

    b. rules for "hiding" and "lighting" (including conditions for maintaining a hidden state and triggers for lighting, and conditions where incoming orders have preference over "hidden" states or are subordinate to such "hidden" states ...);

    c. conditions for adherence to the SIP [Security Information Processor] including the cases where an exchange will use direct feeds in conjunction with the SIP to determine "locking" and "lighting" conditions;

---

[23] SCOTT PATTERSON, DARK POOLS: THE RISE OF THE MACHINE TRADERS AND THE RIGGING OF THE U.S. STOCK MARKET 205 (rev. ed. 2013) (quoting an anonymous employee of Archipelago, which ultimately became NYSE Arca).

    d. conditions and mechanisms where information
about an exchange's protected quotation state
management, which normally would be expected
to remain local to the exchange order matching
engine, is communicated to HFTs in an advanta-
geous manner (i.e., mechanisms in which price
sliding reject messages provide "re-posting" guid-
ance for HFTs);

    e. conditions of eligibility for maker/taker fees and
rebates and conditions where fee transference
occurs (including the conditions where nonmar-
ketable orders are re-posted to execute against
special orders to incur taker fees); and

    f. the scenarios where the various price-sliding
conditions are applied (with detail provided for
both HFT order types and the common public
customer order types), as well as full detail on
conditions where "Post Only" orders in a hidden
state may internally lock a market or otherwise
gain precedence over other orders (including
such properties as would apply to "Post Only"
mid-point orders).[24]

This conundrum also goes beyond "official" sets of order types: "Properties of different modifiers for the same order type may contradict each other or interact in a non-transparent and non-intuitive way."[25] In other words, certain combinations of modifiers may constitute de facto unique order types. While the line between "order types" and "modifiers" cannot be defined with absolute precision, this distinction could be utilized to hide the true functionality.[26]

---

[24] Haim Bodek, *Reigniting the Order Type Debate: Haim Bodek Explains the Real Issues with 'Undocumented' Order Type Features*, TABB F. (Aug. 20, 2014), http://tabbforum.com/opinions/reigniting-the-order-type-debate-haim-bodek-ex plains-the-real-issues-with-%27undocumented%27-order-type-features [https://perma.cc/A8S3-TSN3].

[25] Haim Bodek & Stanislav Dolgopolov, *A Summer of Order Type Filings and Regulatory Heat*, MKT. STRUCTURE INSIGHTS (KOR Grp. LLC, New York, N.Y.), Sept. 2014, at 22, 23.

[26] *Id.*

The order type controversy also had an impact on the academic field of market microstructure, although the focus often appears to be on actual functionalities of certain order types and the resulting complexity rather than inadequate disclosure.[27] Moreover, there is some emerging interest in the academic literature in the value of queue priority,[28] and a specific case of this concept, colorfully described as "queue jumping," is one of the manifestations of the order type controversy.[29] As pointed out by a key HFT critic, queue priority is often based on market structure shortcuts rather than speed per se: "[A]lthough speed mattered,

---

[27] *Compare* Maureen O'Hara, *High Frequency Market Microstructure*, 116 J. FIN. ECON. 257, 262 (2015) ("Exchanges use different order types to appeal to high frequency traders. For example, Direct Edge introduced Hide not Slide orders, a complex order type allowing submitters to circumvent rules designed to prevent locked markets. ... The queue-jumping feature of these orders elicited complaints that they unfairly disadvantage other traders. An alternative view is that these orders allow exchanges to compete with the algorithmic capabilities of broker-dealers by providing traders an enhanced ability to control the execution of their orders."), *and* Craig Pirrong, *Pick Your Poison—Fragmentation or Market Power? An Analysis of RegNMS, High Frequency Trading, and Securities Market Structure*, J. APPLIED CORP. FIN., Spring 2014, at 8, 12 ("[T]he prohibition on locked and crossed markets, and the provision for 'market sweep orders' in RegNMS have led to a proliferation of order types like the 'hide and slide'. ... This proliferation of order types has increased the complexity of the markets, and this complexity gives HFT firms an advantage."), *with* LARRY HARRIS, TRADING AND ELECTRONIC MARKETS: WHAT INVESTMENT PROFESSIONALS NEED TO KNOW 73 (2015), http://www.cfapubs.org/doi/pdf/10.2470/rf.v2015.n4.1 [https://perma.cc/X46J-DJDP] ("In principle, the exchange can set its rules [relating to order types] as it pleases, subject to any regulatory oversight to which it may be subject. Potential problems arise, however, when the rules are not well known or, even more seriously, when they are not followed or when they are misrepresented to the public.").

[28] For several examples of this trend, see Xin Guo et al., Dynamics of Order Positions and Related Queues in a Limit Order Book (Oct. 14, 2015) (unpublished manuscript) (on file with author), https://arxiv.org/pdf/1505.04810v2.pdf [https://perma.cc/AG47-8D4W]; Ciamac C. Moallemi & Kai Yuan, A Model for Queue Position Valuation in a Limit Order Book (June 2017) (unpublished manuscript) (on file with author), https://moallemi.com/ciamac/papers/queue-value-2016.pdf [https://perma.cc/R36Q-L26A]; Spyros Skouras, The Value of Queue Priority (Dec. 12, 2012) (unpublished presentation) (on file with author), http://mms2014.globster.info/uploads/89_SKOURAS.pdf [https://perma.cc/E46L-KNP2].

[29] The term "queue jumping," which was coined by Haim Bodek, was brought to light in the *Wall Street Journal*'s initial exposure of the order type controversy in 2012. Scott Patterson & Jenny Strasburg, *For Superfast Stock Traders, a Way to Jump Ahead in Line*, WALL ST. J., Sept. 19, 2012, at A1.

you could only reap the benefits if you knew what special order type to send and when to send it. In other words, speed was only a prerequisite."[30] In any instance, the advantage of speed is approaching its physical limits: "[A]s the differential between fast and slow players has compressed from minutes (20 years ago) to milliseconds or microseconds today, the benefit of latency becomes more random (uncertain) rather than deterministic (certain)."[31]

The issue of order types has received attention in litigation from the standpoint of transparency and selective disclosure practices. For instance, in a leading class action lawsuit, the court acknowledged the allegations that "the Exchanges either did not disclose many of these order types to ordinary investors or marketed them exclusively to HFT firms, so that the ordinary investors were unaware of their existence."[32] Moreover, the appellate decision noted the allegations that some trading strategies may combine complex order types with colocation services and private data feeds and that "the exchanges may have told ordinary investors about the *existence* of proprietary data feeds and colocation [but] did not publicly disclose the full range or cumulative effect that such services would have on the market, the trading public, or the prices of securities."[33]

The order type controversy has been reflected in the SEC's enforcement program. As one of the preliminary steps, a settlement between the SEC and NASDAQ covered non-compliance with "a fundamental rule governing order priority," which was set by the exchange itself, as a violation of Section 19(g)(1) of the Exchange Act,[34] which requires each SRO to "comply with the provisions of

---

[30] BODEK, *supra* note 20, at 8.

[31] Ashley N. Serrao et al., *HFT 101 with Tradeworx*, CREDIT SUISSE 2, (May 20, 2014), http://docplayer.net/20910101-U-s-market-structure.html [https://perma.cc/H2WV-5G2C] (describing the view of Manoj Narang, CEO of Tradeworx).

[32] *In re* Barclays Liquidity Cross & High Frequency Trading Litig., 126 F. Supp. 3d 342, 354 (S.D.N.Y. 2015), *aff'd in part, rev'd in part sub nom.* City of Providence v. BATS Global Mkts., Inc., 878 F.3d 36 (2d Cir. 2017); *see also* BODEK & DOLGOPOLOV, *supra* note 1, at 125 ("[T]he amended complaint did push the point of deficient disclosure by the securities exchanges with respect to complex order types and provided a taxonomy of investor harm from such order type-related practices.").

[33] *City of Providence*, 878 F.3d at 43, 50.

[34] NASDAQ Stock Mkt., LLC, Exchange Act Release No. 69,655, at 2, 8 (May 29, 2013) (settled proceeding), https://www.sec.gov/litigation/admin/2013/34-69655.pdf [https://perma.cc/6XPA-RQQ4].

this chapter [i.e., the Exchange Act], the rules and regulations thereunder, and its own rules."[35] A similar settlement censured the Chicago Board Options Exchange for "fail[ing] to adequately enforce its own rules, including its firm quote and priority rules," as a violation of the same statutory provision.[36] Yet another settlement censured NYSE Arca for "executing Mid-Point Passive Liquidity Orders in a manner inconsistent with its rules," also as a violation of the same statutory provision.[37] However, all of these enforcement actions contained no allegations relating to symbiotic relationships between trading venues and their preferred market participants or, for that matter, allegations of securities fraud.

Ultimately, the order type controversy is exemplified by the much-anticipated settlement with Direct Edge's two exchanges, which went to the heart of the matter:

> Complete and accurate disclosure of an exchange's order types and order handling procedures is necessary to promote a fair, orderly, and free and open market. ... When an exchange fails to completely and accurately describe its order types in its rules, it creates a significant risk that the manner in which those order types operate will not be understood by all market participants, thereby compromising the integrity and fairness of trading on that exchange. This risk is compounded when the exchange discloses information regarding the operation of those order types to some but not all of its members.[38]

As discussed in the settlement, "Instead of a single price sliding process as described in their rules, the Exchanges accepted

---

[35] 15 U.S.C. § 78s(g)(1) (2016).

[36] Chi. Bd. Options Exch., Inc., Exchange Act Release No. 69,726, at 19 (June 11, 2013) (settled proceeding), https://www.sec.gov/litigation/admin/2013/34-69726.pdf [https://perma.cc/229F-NCY3].

[37] N.Y. Stock Exch. LLC, Exchange Act Release No. 72,065, at 17 (May 1, 2014) (settled proceeding), http://www.sec.gov/litigation/admin/2014/34-72065.pdf [https://perma.cc/N2CE-3UHL].

[38] EDGA Exch. Inc., Exchange Act Release No. 74,032, at 2 (Jan. 12, 2015) (settled proceeding), http://www.sec.gov/litigation/admin/2015/34-74032.pdf [https://perma.cc/QD2L-CXBL]. On the other hand, the SEC closed its related investigation of the other two exchanges owned by the same group, BATS Exchange and BATS Y-Exchange. Letter from Kathryn A. Pyszka, Assistant Regional Dir., Chi. Regional Office, U.S. Sec. & Exch. Comm'n, to Eric Swanson, Gen. Counsel, BATS Global Mkts., Inc. (Jan. 12, 2015), http://cdn.batstrading.com/resources/regulation/SEC_BATS_Closeout_Letter.pdf [https://perma.cc /ZG42-7LYM].

three different price sliding order types, called 'Single Re-Price,' 'Price Adjust,' and 'Hide Not Slide'."[39] Importantly, this enforcement action referenced the existence of two HFT firms actively involved with requesting, if not designing, specific queue position-related functionalities,[40] and one of them even "advised Direct Edge that implementation of [the requested] order type would likely cause it to increase the order flow that it sent to Direct Edge from 4–5 million orders per day to 12–15 million orders per day."[41] There are additional illustrations of mutually beneficial arrangements for Direct Edge and preferred traders:

> For users of HNS [Hide Not Slide], HNS orders would have execution priority over MPM [Midpoint Match] orders, as well as over other price slid orders when the other price slid orders were unslid, re-priced and ranked at the original locking price. For Direct Edge, the revised logic would allow more executions to occur on EDGX and would also increase Direct Edge's revenue on EDGX by virtue of both the increase in executions and by charging taker fees to both the HNS and MPM orders on transactions executing at the NBBO [National Best Bid and Offer] mid-point, as opposed to charging one order a taker fee but having to pay a rebate to the other order.[42]

Importantly, some of the rules of these exchanges were unambiguously inaccurate, as shown by the following example:

> [T]he Exchanges' rules did not state that an order subject to the "displayed price sliding process" would be repriced/ranked to one minimum price variation away from the locking price. The Exchanges' rules also provided that, in the event the NBBO changed, "the order will receive a new timestamp and will be displayed at the original locking price." However, a Single Re-Price order was not unslid and displayed at the original locking price.[43]

While public disclosure of technical specifications perhaps could have been sufficient to deflect at least some potential allegations of false or misleading misrepresentations, the approach that the

---

[39] *EDGA Exch.*, at 3.

[40] For the description of the roles played by "Trading Firm A" and "Trading Firm B," see *id.* at 7–10.

[41] *Id.* at 7.

[42] *Id.* at 10.

[43] *Id.* at 15.

SEC decided not to employ, it was not enough to address other charges: "Technical specifications are not a substitute for exchange rules and do not satisfy an exchange's obligation to submit proposed rules and proposed rule changes under Section 19(b) of the Exchange Act."[44] In any instance, "although the Exchanges provided some information about priority and other characteristics of HNS in technical specifications made available to members, the technical specifications did not contain complete and accurate information regarding the operation of HNS."[45] In addition to charges under Section 19(g)(1) of the Exchange Act, this enforcement action pointed to violations of Section 19(b)(1) in connection with the requirements of the rulemaking process for SROs.[46] Ultimately, the very essence of this enforcement action contradicts an earlier inside claim that "[p]rice-slide orders ... don't suit predatory HFT."[47]

Another enforcement action, which also precisely addressed the essence of the order type controversy, was directed against a dark pool run by UBS.[48] Once again, inadequate disclosure was involved: "UBS ... fail[ed] to disclose [the] PPP [order type] to all UBS ATS subscribers. Although it was eventually disclosed to most subscribers, PPP was pitched almost exclusively to market makers and/or high-frequency trading firms, which UBS expected to be the primary users of the order type."[49] The hidden subpenny functionality associated with this order type, which could be seen as another mechanism of queue jumping, "allowed one subscriber to gain execution priority over another in the order queue by offering to pay an economically insignificant sub-penny more per share [in violation of Rule 612 of Regulation

---

[44] *Id.* at 3 n.4.

[45] *Id.* at 3. For instance, "with respect to EDGX, the specifications incorrectly stated that HNS orders were ranked at the locking price when, in fact, they were ranked at the midpoint of the NBBO and had discretion to execute to the locking price in certain circumstances." *Id.* at 13.

[46] *Id.* at 17–18.

[47] Phil Mackintosh, *Demystifying Order Types*, KCG HOLDINGS, INC. 13 (Sept. 2014), http://www.smallake.kr/wp-content/uploads/2016/02/KCG_Demystifying-Order-Types_092414.pdf [https://perma.cc/58ZV-F4GT].

[48] UBS Sec. LLC, Securities Act Release No. 9697, Exchange Act Release No. 74,060 (Jan. 15, 2015) (settled proceeding), http://www.sec.gov/litigation/admin/2015/33-9697.pdf [https://perma.cc/9EA8-HQTG].

[49] *Id.* at 3.

NMS]."[50] The SEC also observed that the dark pool's "Form ATS [filed with the SEC] indicated that UBS ATS complied with Rule 612."[51] Moreover, the impact of this order type extended beyond the dark pool itself, which highlights the nature of symbiotic relationships between trading venues and preferred traders: "[B]ecause UBS ATS allowed its subscribers to place orders at prices that were unavailable at ATSs and exchanges that complied with Rule 612 of Regulation [NMS], UBS ATS obtained an unfair competitive advantage over those venues in its efforts to attract and execute orders from market participants."[52] The violations relevant for this order type included the failure to file disclosure forms with the SEC, the existence of the subpenny functionality in contravention of Rule 612 of Regulation NMS, and false and misleading statements as a form of securities fraud under Section 17(a)(2) of the Securities Act of 1933.[53]

---

[50] *Id.* at 6. Other enforcement actions are similar in this respect. For instance, a settlement between the SEC and Credit Suisse addressed instances when Crossfinder, a dark pool, "accepted and ranked tens of millions of orders priced in sub-penny increments [which] were generated through the use of three tags applied to orders destined for the ATS." Credit Suisse Sec. (USA) LLC, Securities Act Release No. 10,013, Exchange Act Release No. 77,002, at 7 (Jan. 31, 2016) (settled proceeding), https://www.sec.gov/litigation/admin/2016/33-10013.pdf [https://perma.cc/JA4G-NX8E]. The SEC observed that "the order tags that enabled sub-penny orders facilitated the very result that Rule 612 was designed to prevent: allowing one subscriber to obtain priority over another who had placed an earlier order by offering to pay an economically insignificant amount." *Id.* Moreover, Credit Suisse's personnel advised certain subscribers how to get this functionality accepted by the system and "use the order tags to place orders that would have priority over orders placed earlier in time but that were pegged exactly to the bid or the offer." *Id.*

[51] *UBS Sec.*, at 5. Although not entirely clear from the facts in the settlement, it is also likely that the dark pool's representations disseminated to at least some customers included statements essentially confirming compliance with the subpenny ban. Although earlier versions from the relevant period are not in the public domain, a later version of the general rules of this dark pool stressed that "[s]ub-penny executions will not occur except at the midpoint unless the stock is trading below $1.00." UBS ATS, RULES OF ENGAGEMENT 7 (rev. July 16, 2014).

[52] *UBS Sec.*, at 6.

[53] *Id.* at 14–15. As illustrated by this enforcement action, there may be serious consequences relating to allegations of securities fraud even in the context of settlements. *See* Letter from David C. Bohan, Katten Muchin Rosenman LLP, to Mary J. Kosterlitz, Chief of the Office of Enforcement Liaison, Div. of

This string of enforcement actions needs to be considered in conjunction with the process of review and reassessment of order type practices by trading venues themselves, especially equities exchanges. The cleanup of order type practices by trading venues, whether seen as a voluntary or forced initiative, had started around 2012,[54] intensifying rather dramatically two years later. One may point to "the phenomenon of comprehensive order type-focused rule filings by equities exchanges, which purport to enhance disclosure and provide more clarity, while often maintaining that no or little substantive change is being proposed."[55]

Corp. Fin., U.S. Sec. & Exch. Comm'n 1, 3 (Jan. 14, 2015), http://www.sec.gov /divisions/corpfin/cf-noaction/2015/ubs-ag-011515-405.pdf [https://perma.cc /ESH2-D6CD] (requesting the SEC to "determine that UBS AG shall not be considered an 'ineligible issuer' as defined in Rule 405 [under the Securities Act of 1933] as a result of the cease-and-desist order," given the allegations of violations of "the anti-fraud provisions of the federal securities laws" in connection with the settlement on UBS's dark pool).

[54] *See* BODEK, *supra* note 20, at 49 ("When one reviews market structure changes in [2012], one might note that a number of egregious practices appear to have been eliminated from the exchanges. Specific cases include normalization of binary and FIX protocols, prohibition of queue jumping on orders that 'hide and light,' and the levying of taker fees for aggressively priced Post Only orders.").

[55] BODEK & DOLGOPOLOV, *supra* note 1, at 57–58. For a description of this wave of comprehensive order type-related rule filings, see *id.* at 57–59. As mentioned above, quite a few rule filings have asserted—with some variations—that no substantive change had been proposed. *See, e.g.*, Notice of Filing of a Proposed Rule Change by BATS Exchange, Inc. to Amend Rules 11.9, 11.12, and 11.13, Exchange Act Release No. 74,247, 80 Fed. Reg. 8720, 8721 (Feb. 11, 2015), https://www.gpo.gov/fdsys/pkg/FR-2015-02-18/pdf/2015-03222.pdf [https://per ma.cc/3GPJ-CKCL] ("The proposals ... are the product of a comprehensive review of Exchange system functionality conducted by the Exchange and are intended to add additional clarity and specificity regarding the current functionality of the Exchange's System, including the operation of its order types and order instructions. The Exchange is not proposing any substantive modifications to the System.") (footnote omitted); Notice of Filing of a Proposed Rule Change by New York Stock Exchange LLC Amending Rule 13 and Related Rules Governing Order Types and Modifiers to Clarify the Nature of Order Types, Exchange Act Release No. 73,703, 79 Fed. Reg. 72,039, 72,040 (Nov. 28, 2014), https://www.gpo.gov/fdsys/pkg/FR-2014-12-04/pdf/2014-28476 .pdf [https://perma.cc/H2X7-R99R] ("The Exchange proposes to provide additional clarity to Rule 13 by regrouping and re-numbering current rule text and making other non-substantive, clarifying changes. The proposed rule changes are not intended to reflect changes to functionality but rather to clarify Rule

As another illustration, pursuant to a request by the regulators, every equities exchange had adopted rules clarifying its respective market data usage, which were approved within a two-day span.[56] One of the specific areas articulated by the regulators in

13 to make it easier to navigate. In addition, the Exchange proposes to amend certain rules to remove references to functionality that is no longer operative.") (footnote omitted); Notice of Filing of a Proposed Rule Change by EDGX Exchange, Inc. Relating to Include Additional Specificity Within Rule 1.5 and Chapter XI Regarding Current System Functionality Including the Operation of Order Types and Order Instructions, Exchange Act Release No. 72,676, 79 Fed. Reg. 44,520, 44,520 (July 25, 2014), https://www.gpo.gov/fdsys /pkg/FR-2014-07-31/pdf/2014-17989.pdf [https://perma.cc/37GT-ZQKP] ("[With limited exceptions] the Exchange does not propose to substantively modify the operation of any of the current defined order types or terms or the operation of the System; rather, it intends to provide additional specificity and transparency to Members, Users, and the investing public regarding the Exchange's order types and system functionality, and to organize its rules in a more intuitive and less complex manner.").

[56] For the complete list of the filings made by every equities exchange, see Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by Chicago Stock Exchange, Inc. Concerning the Use of Market Data Feeds by the Exchange, Exchange Act Release No. 72,711, 79 Fed. Reg. 45,570 (July 29, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08-05/pdf/2014-18385.pdf [https:// perma.cc/BG3G-2HPE]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by NASDAQ OMX BX, Inc. to Disclose Publicly the Sources of Data Used for Exchange Functions, Exchange Act Release No. 72,712, 79 Fed. Reg. 45,521 (July 29, 2014), http://www.gpo.gov/fdsys/pkg/FR -2014-08-05/pdf/2014-18386.pdf [https://perma.cc/4368-XN49]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by NASDAQ OMX PHLX LLC to Disclose Publicly the Sources of Data Used for Exchange Functions, Exchange Act Release No. 72,713, 79 Fed. Reg. 45,544 (July 29, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08-05/pdf/2014-18387.pdf [https://perma .cc/7EXP-54A6]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by New York Stock Exchange LLC Clarifying the Exchange's Use of Certain Data Feeds for Order Handling and Execution, Order Routing, and Regulatory Compliance, Exchange Act Release No. 72,710, 79 Fed. Reg. 45,511 (July 29, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08-05/pdf/2014 -18384.pdf [https://perma.cc/GT94-X2LX]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by NYSE Arca, Inc. Clarifying the Exchange's Use of Certain Data Feeds for Order Handling and Execution, Order Routing, and Regulatory Compliance, Exchange Act Release No. 72,708, 79 Fed. Reg. 45,572 (July 29, 2014), http://www.gpo.gov/fdsys/pkg/FR -2014-08-05/pdf/2014-18382.pdf [https://perma.cc/AA8D-Q46G]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by NYSE MKT LLC Clarifying the Exchange's Use of Certain Data Feeds for Order Handling and

this request related to "order handling and execution (e.g., with pegged or midpoint orders)," as well as order routing more generally,[57] and some commentators subsequently criticized a few of the adopted rules.[58] These changes also strike at the heart of the

Execution, Order Routing, and Regulatory Compliance, Exchange Act Release No. 72,709, 79 Fed. Reg. 45,513 (July 29, 2014), http://www.gpo.gov/fdsys /pkg/FR-2014-08-05/pdf/2014-18383.pdf [https://perma.cc/EN25-S9GX]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by BATS Exchange, Inc. to Clarify for Members and Non-Members the Use of Certain Data Feeds for Order Handling and Execution, Order Routing and Regulatory Compliance, Exchange Act Release No. 72,685, 79 Fed. Reg. 44,889 (July 28, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08-01/pdf/2014-18120.pdf [https:// perma.cc/XK8L-32AK]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by BATS Y-Exchange, Inc. to Clarify for Members and Non-Members the Use of Certain Data Feeds for Order Handling and Execution, Order Routing and Regulatory Compliance, Exchange Act Release No. 72,687, 79 Fed. Reg. 44,926 (July 28, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08-01 /pdf/2014-18122.pdf [https://perma.cc/3XMG-K2PN]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by EDGA Exchange, Inc. to Clarify for Members and Non-Members the Use of Certain Data Feeds for Order Handling and Execution, Order Routing and Regulatory Compliance, Exchange Act Release No. 72,682, 79 Fed. Reg. 44,938 (July 28, 2014), http:// www.gpo.gov/fdsys/pkg/FR-2014-08-01/pdf/2014-18117.pdf [https://perma.cc /8RW3-EVM4]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by EDGX Exchange, Inc. to Clarify for Members and Non-Members the Use of Certain Data Feeds for Order Handling and Execution, Order Routing and Regulatory Compliance, Exchange Act Release No. 72,683, 79 Fed. Reg. 44,950 (July 28, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-08 -01/pdf/2014-18118.pdf [https://perma.cc/QX67-QUGW]; Notice of Filing and Immediate Effectiveness of Proposed Rule Change by NASDAQ Stock Market LLC to Disclose Publicly the Sources of Data Used for Exchange Functions, Exchange Act Release No. 72,684, 79 Fed. Reg. 44,956 (July 28, 2014), http:// www.gpo.gov/fdsys/pkg/FR-2014-08-01/pdf/2014-18119.pdf [https://perma.cc /5LF8-32YG].

⁵⁷ Notice of Filing and Immediate Effectiveness of Proposed Rule Change by NASDAQ Stock Market LLC, 79 Fed. Reg. at 44,956 (quoting Letter from Stephen Luparello, Dir., Div. of Trading & Mkts., U.S. Sec. & Exch. Comm'n, to Robert Greifeld, Chief. Exec. Officer, NASDAQ OMX Grp., Inc. (June 20, 2014)).

⁵⁸ *See, e.g.*, Donald Bollerman, Head of Mkt. Operations, IEX ATS, Comment Letter to the SEC on the Rule Filings by BATS Exchange Inc. and BATS Y-Exchange Relating to the Use of Certain Data Feeds 2–3 (Sept. 25, 2014), http://www.sec.gov/comments/sr-bats-2014-029/bats2014029-3.pdf [https:// perma.cc/WP9E-8UUX] (pointing out that BATS Exchange and BATS Y-Exchange "represent that for purposes of determining the NBBO [National Best Bid and Offer] for pegged orders, or the PBBO [Pegged Best Bid and Offer], they

heated exchange between William O'Brien of the combined BATS-Direct Edge and Brad Katsuyama of IEX, which later led to a correction of O'Brien's statements by his company—with some pressure apparently exerted by the Attorney General of the State of New York—regarding the use of the (slower) consolidated and (faster) private data feeds for pricing purposes in Direct Edge's order matching engine.[59] Moreover, there have been subsequent data feed-related clarifications.[60] Furthermore, securities exchanges are not the only ones providing additional disclosure relating to their order type practices. Amidst repeated calls to apply the same logic to ATSs,[61] the trend of enhanced disclosure

require their systems to receive their own quotes from the SIP feeds" and stating that "it appears probable that the NBBO and PBBO at certain points in time will be out of alignment").

[59] For sources describing this incident, see Bob Pisani, *BATS Clarifies Statement Made on CNBC*, CNBC (Apr. 4, 2014), http://www.cnbc.com/2014 /04/04/bats-clarifies-statement-made-on-cnbc.html [https://perma.cc/8ARB-HL CE]; Rob Wile, *BATS Exchange Forced to Retract Statement Its President Made on CNBC*, BUS. INSIDER (Apr. 4, 2014), http://www.businessinsider.com /bats-forced-to-retract-presidents-statement-from-cnbc-tussle-2014-4 [https://per ma.cc/U8ZC-5XY4].

[60] For a sample of such additional clarifications, see Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by NASDAQ Stock Market, LLC to Update Public Disclosure of Exchange Usage of Market Data, Exchange Act Release No. 74,690, 80 Fed. Reg. 20,282 (Apr. 9, 2015), https://www.gpo .gov/fdsys/pkg/FR-2015-04-15/pdf/2015-08545.pdf [https://perma.cc/33U2-CBC5]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by New York Stock Exchange LLC Specifying in Exchange Rules the Exchange's Use of Certain Data Feeds for Order Handling and Execution, Order Routing, and Regulatory Compliance, Exchange Act Release No. 74,410, 80 Fed. Reg. 12,240 (Mar. 2, 2015), https://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015 -05164.pdf [https://perma.cc/UA5P-W59E]; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by Chicago Stock Exchange, Inc. Concerning the Use of Market Data Feeds by the Exchange, Exchange Act Release No. 74,357, 80 Fed. Reg. 11,252 (Feb. 24, 2015), https://www.gpo.gov/fdsys/pkg /FR-2015-03-02/pdf/2015-04181.pdf [https://perma.cc /2E25-CY9A].

[61] *See, e.g.*, *The Role of Regulation in Shaping Equity Market Structure and Electronic Trading: Hearing Before the S. Comm. on Banking, Hous., & Urban Affairs*, 113th Cong. 66 (2015) (prepared statement of Joe Ratterman), http:// www.gpo.gov/fdsys/pkg/CHRG-113shrg91300/pdf/CHRG-113shrg91300.pdf [http: //perma.cc/9TM2-9LHL] (stating that "additional steps could be considered to require ATSs to provide customers with their rules of operation, which would include order types, eligible participant and participant tiers, all forms of data feed products, and order-routing logic and eligible routing venues.");

by such entities, often manifested in releasing updated Form ATS filings and making them publicly available, is plainly visible.[62] This trend is also reinforced by the SEC's proposal that would, among other things, require operators of ATSs "to provide detailed information about the manner of operations of the ATS [in question]" and "to make filings on Form ATS-N public."[63]

On the other hand, some order type-related changes introduced by trading venues still generate controversy. One recent contentious change is represented by the SEC's approval of the much-debated order type changes at the New York Stock Exchange and NYSE MKT relating to the "add liquidity only" modifier and its usage in intermarket sweep orders.[64] The critics of these changes maintained that the provided disclosure was inadequate, the usage of intermarket sweep orders was contrary to Regulation

---

Computerized Trading: What Should the Rules of the Road Be?: Hearing Before the Subcomm. on Sec., Ins., & Inv. of the S. Comm. on Banking, Hous., & Urban Affairs, 112th Cong. 70 (2013) (prepared statement of Larry Tabb, CEO, TABB Group), http://www.gpo.gov/fdsys/pkg/CHRG-112shrg80168/pdf/CHRG -112shrg80168.pdf [https://perma.cc/M25R-WRSZ] (arguing that "[e]xchanges, and for that matter ATSs, ECNs, internalizers and even brokers need to begin to provide greater transparency, descriptions, and concrete examples of how each order type works, how fees/rebates are generated, where they show up in the book queue, how and when they route out, and how these order types change under the various market conditions"); FIA PRINCIPAL TRADERS GRP. (FIA PTG), EQUITY MARKET STRUCTURE POSITION PAPER 3 (Sept. 30, 2014), http:// www.futuresindustry.org/ptg/downloads/FIA%20PTG%20Equity%20Market %20Structure%20Postion%20Paper.pdf [https://perma.cc/4NWY-ALJS] (favoring reform to enhance transparency, including order type practices, with respect to "all market participants in all operational aspects of trading venues, including exchanges, ATSs and dark pools").

[62] For a discussion of the phenomenon of additional disclosure by dark pools, which represent the bulk of ATSs, see Bradley Hope & Scott Patterson, *Dark Pools Shed Light on Their Operations*, WALL ST. J., June 3, 2014, at C2.

[63] Regulation of NMS Stock Alternative Trading Systems, Exchange Act Release No. 76,474, 80 Fed. Reg. 80,998, 80,998 (proposed Nov. 18, 2015) (to be codified at 17 C.F.R. pts. 240, 242 & 249), https://www.gpo.gov/fdsys/pkg/FR-2015 -12-28/pdf/2015-29890.pdf [https://perma.cc/64CA-NE6P].

[64] Order Approving Proposed Rule Changes by New York Stock Exchange LLC and NYSE MKT LLC Amending Exchange Rule 13 to Make the Add Liquidity Only Modifier Available for Limit Orders, and Make the Day Time-in-Force Condition and Add Liquidity Only Modifier Available for Intermarket Sweep Orders, Exchange Act Release No. 73,333, 79 Fed. Reg. 62,223 (Oct. 9, 2014), https://www.gpo.gov/fdsys/pkg/FR-2014-10-16/pdf/2014-24547.pdf [https:// perma.cc/3FFY-ACWZ].

NMS, and the likely usage would be beneficial to HFTs at the expense of other market participants.[65] Yet another example is provided by the discretionary peg order type that serves as one of the key features of IEX, a trading venue that could be described as a response to the market structure crisis, and this order type had received a great deal of attention during the process of IEX's approval as a securities exchange.[66]

Overall, the order type controversy has exposed trading venues to liability, sometimes solely for not following proper rule-making procedures, but in some other cases also for securities fraud. More recently, securities exchanges as SROs have been proven to be vulnerable to private lawsuits in connection with their order type practices, as a key appellate decision pronounced these functionalities as not constituting "regulatory commands by the exchanges compelling traders to behave in certain ways" and hence outside the scope of regulatory immunity.[67] Moreover, the

[65] For this polemic between the exchange group and its critics, see *Comments on NYSE Rulemaking: Notice of Filing of Proposed Rule Change Amending Rule 13 To Make the Add Liquidity Only Modifier Available for Additional Limit Orders and Make the Day Time-In-Force Condition Available for Intermarket Sweep Orders [Release No. 34-72548; File No. SR-NYSE-2014-32]*, U.S. SEC. & EXCH. COMM'N, http://www.sec.gov/comments/sr-nyse-2014-32/nyse 201432.shtml [https://perma.cc/SEN2-6S5S] (last modified Oct. 9, 2014).

[66] For the SEC's discussion of the discretionary peg order type and the arguments offered by its proponents and opponents, see Application of Investors' Exchange, LLC for Registration as a National Securities Exchange, Exchange Act Release No. 78,101, 81 Fed. Reg. 41,142, 41,152–53 (June 17, 2016), https://www.gpo.gov/fdsys/pkg/FR-2016-06-23/pdf/2016-14875.pdf [https://perma.cc/X9AC-8VYR].

[67] City of Providence v. BATS Global Mkts., Inc., 878 F.3d 36, 47–48 (2d Cir. 2017). Furthermore, the SEC made a similar conclusion in its brief: "[Order type] offerings now bear more resemblance to products and services like co-location and proprietary feeds than to member regulation." Brief of the Securities and Exchange Commission, *Amicus Curiae*, City of Providence v. BATS Global Mkts., Inc., *supra* note 6, at 30. This potentially forward-looking position taken by the SEC, as the agency responsible for enforcing the Exchange Act, raises a number of entwined issues about the nature and strength of the deference that should be accorded by the federal courts to this interpretation of the doctrine of regulatory immunity in the form of an amicus brief and the scope of this interpretation of a somewhat blurry concept with respect to the statute as a whole, its specific provisions, or even specific rules of general application promulgated by the SEC, such as Rule 10b-5 itself. *See* Edwards v. First Am. Corp., 798 F.3d 1172, 1179–80 (9th Cir. 2015) ("An agency's interpretation of the statute—when presented in an amicus

sheer volume of cleanup by trading venues gives some idea about the prior state of opacity, potential trading profits, and opportunities for selective disclosure as a tool for courting and retaining preferred traders. Also, it is an encouraging sign that some regulatory changes and reform proposals in the market structure space have been viewed through the order type lens.[68] Likewise, there

---

brief—is not promulgated in the exercise of its formal rule-making authority, so no *Chevron* deference is warranted. Even if the terms 'goods,' 'services,' and 'facilities' also appear in the regulation, CFPB [Consumer Financial Protection Bureau] is in fact interpreting Congress's words in the statute, so we give no deference to CFPB's interpretation. In addition, because the statutory terms at issue are not ambiguous, no deference is merited." (internal citations omitted) (referencing the deference standard established by Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984)); State of Connecticut Office of Prot. & Advocacy for Pers. with Disabilities v. Hartford Bd. of Educ., 464 F.3d 229, 239–40 (2d Cir. 2006) ("Where ... an agency advances a statutory interpretation in an amicus brief that has not been articulated before in a rule or regulation, we do not apply the high level of deference due under *Chevron* ... [But] a reasonable agency determination, when advanced in an amicus brief that is not a 'post hoc rationalizatio[n]' [under *Auer*] ... may be entitled to some deference on account of the 'specialized experience' and information available to the agency. Under *Skidmore*, the weight we give an agency's judgment is based on 'the thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade, if lacking power to control.'" (internal citations omitted) (referencing the deference standards established by *Chevron*, 467 U.S. 837, and Skidmore v. Swift & Co., 323 U.S. 134 (1944)); Belt v. EmCare, Inc., 444 F.3d 403, 416 n.35 (5th Cir. 2006) ("The most important reason for extending greater deference to an *amicus* brief that purports to interpret an agency's own ambiguous regulation (under *Auer*), than a brief that interprets the organic statute directly (under *Chevron*), is the greater expertise and familiarity of the agency with respect to the history and content of its own enacted rules." (referencing the deference standards established by Auer v. Robbins, 519 U.S. 452 (1997), and *Chevron*, 467 U.S. 837). In any instance, this interpretation, given its seeming novelty, is likely to receive a great deal of attention of the federal courts, as well as other parties.

[68] *See, e.g.*, FIA PRINCIPAL TRADERS GRP., SIMPLIFYING U.S. EQUITY MARKET STRUCTURE 2 (Jan. 28, 2015), http://www.futuresindustry.org/ptg/downloads /FIA%20PTG%20Position%20-%20Simplifying%20US%20Equity%20Market%20 Structure.pdf [https://perma.cc/LR5G-BKRA] ("[W]e recommend simply eliminating the trade through rule and the related prohibition on locked and crossed markets [which would, among other things] *reduc[e] the need for hundreds of exchange order types* that are used today to prevent locks, crosses and trade-throughs. ..."); Larry Tabb, *Trade-At: Reducing Competition, Increasing Complexity and Channeling Profits to Intermediaries*, TABB F. (Dec. 4, 2014), http://tabbforum.com/opinions/trade-at-reducing-competition-increasing-com

is a greater awareness of the argument addressing additional complexity introduced by expanding order type menus.[69] At the same time, the nature and extent of potential liability of market participants themselves, such as HFTs, tend to remain a more tangential issue, perhaps being obscured by the focus on trading venues.

II. SECRET ARRANGEMENTS BETWEEN TRADING VENUES AND PREFERRED TRADERS

The phenomenon of secret arrangements between trading venues and preferred traders relating to the nature of certain functionalities is chiefly illustrated by the order type controversy.

plexity-and-channeling-profits-to-intermediaries [https://perma.cc/4HZC-XGFC] ("Trade-At will spawn a whole new generation of complex order types, increasing the gulf between those that properly implement these messages and those that don't."); R.T. Leuchtkafer (pseud.), Comment Letter to the SEC on MIDAS 2 (May 15, 2014), http://www.sec.gov/comments/equity-market-struc ture-2013/equitymarketstructure2013-6.pdf [https://perma.cc/72BZ-UUWE] ("MIDAS has almost no information on order types and order modifiers other than the obvious fact [that] it contains only displayed orders [while many orders] are not displayed or are at best conditionally displayed.").

[69] C*ompare* Richie Prager, Managing Dir. & Head of Trading & Liquidity Strategies, et al., BlackRock, Inc., Comment Letter to the SEC on Equity Market Structure and Regulation Systems Compliance and Integrity 5–6 (Sept. 12, 2014), http://www.sec.gov/comments/s7-02-10/s70210-419.pdf [https://perma.cc /YB6J-WZU6] ("Proliferation in exchange order types has been another key contributor to market complexity. Many order types are designed to comply with regulations or promote liquidity. However, the interaction between these complex instructions gives rise to a labyrinthine rulebook of order priority and matching engine logic complicating the ability of regulators, exchanges and investors to fully understand the interactions and consequences."), *and* PETER KOVAC, FLASH BOYS: NOT SO FAST: AN INSIDER'S PERSPECTIVE ON HIGH-FREQUENCY TRADING 106 (2014) ("While each order type may be useful to someone, the overall effect is that they create a rat's nest of complexity that only gets worse over time."), *and* COMM. ON CAPITAL MKTS. REG., THE U.S. EQUITY MARKETS: A PLAN FOR REGULATORY REFORM 132 (July 2016), http://www.capmktsreg.org/wp-content/uploads/2016/10/08_08_FINAL_DRAFT _EMS_REPORT-1.pdf [https://perma.cc/32E7-LCZU] ("The complexity of order types and maker-taker pricing schedules also makes it difficult for exchanges to meet their Exchange Act obligation to clearly describe their rules and proposed rule changes in public filings."), *with* Mackintosh, *supra* note 47, at 6, 9 ("A similarity of many complex order types is (ironically) that they simplify other aspects of the market [e]ither by reducing message traffic or reducing order handling or helping with fee control and routing. ... [A] simplification of order types is more complex than you think.").

Importantly, this paradigm puts limitations on the articulated strengths of electronic order matching engines that are said to "enforce the exchange's trading order precedence and pricing rules without error or exception, and they never favor friends or confederates [and] keep [supported hidden] orders perfectly hidden [without] inadvertently or fraudulently reveal[ing] [such orders] to friends or confederates."[70] However, some commentators are still of the opinion that HFTs themselves, even when complicit with trading venues, are entirely off the hook in terms of their legal liability:

> If an exchange pulls me over to the side and says, "I see you're using XYZ order type. If you want us to modify that order type in a specific way or you want us to create another order type that I won't tell anyone about, will that swing more of your order flow to my exchange?"—in that situation, the HFT [as opposed to the exchange] hasn't done anything wrong.[71]

This reading is not correct, as HFTs themselves could *at least* be held liable as aiding and abetting securities fraud for a false or misleading disclosure released by the trading venue in question. On the other hand, attaching primary liability, as opposed to secondary liability, is no easy task. For instance, HFTs are likely to be outside the definition of primary violators as *makers* of false and misleading statements made by trading venues even if such market participants had offered a hand in designing functionalities and crafting disclosures in question.[72] From the standpoint

[70] HARRIS, *supra* note 27, at 37.

[71] Anthony Malakian, *Dark Pools in the Firing Line*, WATERS TECH. (Sept. 1, 2014), http://www.waterstechnology.com/waters/feature/2362568/dark -pools-in-the-firing-line [https://perma.cc/Q4HR-GG75] (registration required) (quoting Larry Tabb, Tabb Group).

[72] According to *Janus Capital Group, Inc. v. First Derivative Traders*, 131 U.S. 2296 (2011), decided in the context of Section 10(b) of the Exchange Act and Rule 10b-5, there are substantial limitations to being characterized as a "maker" of a particular statement, despite potential participation. For the author's discussion of *Janus* in connection with the order type controversy and HFT, see Stanislav Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure: One Whistleblower's Consequences for Securities Regulation*, 2014 U. ILL. J.L. TECH. & POL'Y 145, 160 n.80 [hereinafter Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure*]. *Stoneridge Investment Partners, LLC v. Scientific-Atlanta, Inc.*, 552 U.S. 148 (2008), a key precursor to *Janus*, similarly

of potential defenses, an even more important consideration is that HFTs may simply be recipients of selectively disclosed information without prior involvement of any kind. Likewise, information about the very mechanics of the trading process, as opposed to direct disclosure of information about specific orders, is arguably different from true inside/price-moving information about securities and underlying companies, although there may be approaches to inferring the existence of "hidden" trading interest.[73]

For considering scenarios of liability of users of certain order types as primary violators, the following taxonomy may be employed: (1) an order type has merely undocumented features; (2) an order type has undocumented features that violate some regulatory norm under federal securities law, such as Regulation NMS or another SEC rule; and (3) the actual functioning of an order type contradicts its formal documentation available to the general public or users, such as SRO filings, rulebook/trading procedure disclosures, and technical manuals.[74] Importantly, trading venues make explicit representations about the functioning of

restricted the circle of potential primary violators under the concept of "scheme liability." For a recent update on the scheme liability case law, see W. Va. Pipe Trades Health & Welfare Fund v. Medtronic, Inc., 845 F.3d 384, 391–93 (8th Cir. 2016). Finally, *Central Bank of Denver, N.A. v. First Interstate Bank of Denver, N.A.*, 511 U.S. 164 (1994), which removed the availability of a private right of action for aiding and abetting under Section 10(b) of the Exchange Act and Rule 10b-5, has been interpreted as precluding private lawsuits based on claims of participation in a conspiracy by otherwise secondary violators: "[E]very court to have addressed the viability of a conspiracy cause of action under § 10(b) and Rule 10b-5 in the wake of *Central Bank* has agreed that *Central Bank* precludes such a cause of action." Dinsmore v. Squadron, Ellenoff, Plesent, Sheinfeld & Sorkin, 135 F.3d 837, 841 (2d Cir. 1998).

[73] For the author's discussion of insider trading in the context of the order type controversy, see Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure*, *supra* note 72, at 155–56 & n.56. This issue is separate from the much broader debate of whether certain speed-based advantages or access to specialized data products constitute or should be treated like insider trading. While such practices generally still pass the muster of legality, perhaps some specific instances could be characterized as insider trading. For an illustration, see Mercer Bullard, *Insider Trading in a Mannean Marketplace*, 88 TEMP. L. REV. 223 (2016).

[74] For an earlier version of this taxonomy, which addresses only SROs, see Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure*, *supra* note 72, at 154.

their order types in a variety of forms.[75] Furthermore, one important consideration is that trading venues often *duplicate* or *implement*—sometimes by directly regulating their own market participants—regulatory norms under federal securities law. As an illustration, the trade-through rule contained in Regulation NMS has been imposed on "trading centers" and not necessarily on individual traders.[76] In other words, one may contrast a market participant committing an actual violation of an SEC rule and a market participant taking advantage of some trading venue-provided functionality that is contrary to an SEC rule, with the second

---

[75] *See, e.g.*, BATS Exch., Inc., SEC No-Action Letter 3 n.7 (Feb. 25, 2010), http://www.sec.gov/divisions/marketreg/mr-noaction/2010/batsexchange0225 10-10b10.pdf [https://perma.cc/94RB-UHQB] (noting the representation made by BATS that its "rules do not provide for any special order type that would be an exception to the strict price-time priority handling of orders as set forth in Rule 21.8(a) of the Exchange").

[76] *See* Regulation NMS, Exchange Act Release No. 51,808, 70 Fed. Reg. 37,496, 37,631 (June 9, 2005) (codified at Order Protection Rule, 17 C.F.R. § 242.611(a)(1)), https://www.gpo.gov/fdsys/pkg/FR-2005-06-29/pdf/05-11802 .pdf [https://perma.cc/Q4DL-MA5X] ("A trading center [a category that includes on-exchange and off-exchange market makers along with securities exchanges and ATSs] shall establish, maintain, and enforce written policies and procedures that are reasonably designed to prevent trade-throughs on that trading center of protected quotations in NMS stocks [subject to several enumerated exceptions]."). One relevant administrative adjudication, which dealt with regulation of specialists by securities exchanges, stated that Section 11(b) of the Exchange Act and the corresponding SEC rule "do[ ] not place any requirements directly on specialists [as opposed to securities exchanges], and thus cannot be violated by specialists." David A. Finnerty, Initial Decision Release No. 381, 96 SEC Docket 1098, 1034–35 (ALJ July 13, 2009). Another interesting scenario is presented by the SEC's enforcement action against UBS, with one of the allegations involving the existence of the subpenny functionality used by HFTs and other preferred market participants, which was contrary to Regulation NMS. UBS Sec. LLC, Securities Act Release No. 9697, Exchange Act Release No. 74,060 *passim* (Jan. 15, 2015) (settled proceeding), http:// www.sec.gov/litigation/admin/2015/33-9697.pdf [https://perma.cc/9EA8-HQTG]. The applicable rule's language, which unambiguously covers the conduct of UBS's dark pool itself, is as follows: "No national securities exchange, national securities association, alternative trading system, vendor, or broker or dealer shall *display, rank, or accept* from any person a bid or offer, an order, or an indication of interest in any NMS stock priced in an increment smaller than $0.01." Regulation NMS, 70 Fed. Reg. at 37,632 (codified at Minimum Pricing Increment, 17 C.F.R. § 242.612(a)) (emphasis added). However, another question is whether this language would expose an HFT, assuming its broker-dealer status, for *placing* a de facto subpenny order.

scenario probably being more common. Finally, it is important to remember that a violation of a regulatory norm under federal securities law or a rule of an individual trading venue does not automatically qualify as securities fraud.[77] As a constant reminder, "Section 10(b) [of the Exchange Act] is aptly described as a catchall provision, but what it catches must be fraud."[78]

Probably the most promising approach to attaching liability to market participants, such as HFTs, lies in breaking rules of trading venues by employing certain functionalities *because* their features are in fact contrary to their publicly disclosed documentation, such as SRO rules. Conceptually—and guided by a sizable body of case law and supporting analysis—it is possible to base a securities fraud claim on violations of SRO rules, as opposed to treating such violations as independent causes of action under federal securities law.[79] While SRO rules approved by the SEC

---

[77] *See* Stanislav Dolgopolov, *Providing Liquidity in a High-Frequency World: Trading Obligations and Privileges of Market Makers and a Private Right of Action*, 7 BROOK. J. CORP. FIN. & COM. L. 303, 331 (2013) [hereinafter Dolgopolov, *Providing Liquidity in a High-Frequency World*] ("Overall, not every violation of an SRO rule constitutes fraud under federal securities law—or even a direct economic injury that does not necessarily come under the umbrella of fraud—but some of such violations do rise to that level.").

[78] Chiarella v. United States, 445 U.S. 222, 234–35 (1980).

[79] For the author's analysis of this approach, including the issue of implied representations about compliance with the applicable trading protocol, see Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure*, *supra* note 72, at 154–61; Dolgopolov, *Providing Liquidity in a High-Frequency World*, *supra* note 77, *passim*; *see also* Milliner v. Mut. Sec., Inc., 207 F. Supp. 3d 1060, 1065 (N.D. Cal. 2016) ("[C]ourts have often looked to [SRO] rules in defining the scope of common law duties."); *In re* Enron Corp. Sec., Derivative & "ERISA" Litig., MDL 1446, Civil Action No. H-01-3624, 2016 U.S. Dist. LEXIS 101230, at *229 (S.D. Tex. Aug. 2, 2016) ("While not providing a private right of legal action, violations of the NASD or the NYSE rules are relevant to demonstrating a course of conduct or deceptive act constituting fraud under § 10(b) [of the Exchange Act] and Rule 10b-5."). Among the recent cases, the concept of implied representations was raised in *VanCook v. SEC*, 653 F.3d 130 (2d Cir. 2011), which triggered the deference standard under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). Another recent case questioned the validity of this precedent: "[I]t is not at all clear that the Second Circuit definitively has taken the position that Commission interpretations in adjudicatory proceedings are entitled to *Chevron* deference. That is especially so in view of the fact that the 'formal adjudicatory decision' referred to in *VanCook* was not the product of

are not the only source of trading rules, this category is an important illustration. Ultimately, the relevant distinction is between universally available trading rules—be they an exchange's publicly disclosed rulebook with the regulators' stamp of approval or an ATS's technical manual distributed to all subscribers—and selectively disclosed trading rules.

To condense, a viable approach to attaching primary liability to HFTs as market participants in connection with securities fraud is likely to lay in *violations* of the applicable trading protocol, chiefly meaning rules of individual trading venues, in connection with selective disclosure. Yet, it becomes essential to define the nature of the underlying violation, especially because such market participants typically need not take discretionary affirmative action to break the rule in question.[80] It is not about

---

an adversary litigation, but a consent order entered to settle an administrative case." Chau v. SEC, 72 F. Supp. 3d 417, 436 (S.D.N.Y. 2014). However, as previously pointed out by the author, the application of the *Chevron* deference to settlements may be problematic, but a different level of deference could apply. Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure*, *supra* note 72, at 158–60 & nn.73–78.

[80] For an illustration of the scenario of discretionary affirmative action offered by several controversies involving exchange specialists that combined the roles of order matching agents and market participants through their principal trading activities, see *In re* NYSE Specialists Sec. Litig., 405 F. Supp. 2d 281, 291–92 (S.D.N.Y. 2005); Press Release No. 2009-42, U.S. Sec. & Exch. Comm'n, SEC Charges 14 Specialist Firms for Improper Proprietary Trading (Mar. 4, 2009), https://www.sec.gov/news/press/2009/2009-42.htm [https://perma.cc/4S6B-ADB4]. By contrast, the modern paradigm is essentially based on rules that are programmed into electronic order matching engines. In other words, in a typical scenario, there is no specific opportunity, as a trade-by-trade deliberate action, to break the boundaries of the applicable rules, as written, or to comply with them. But the opposite scenario of discretionary violations by some market participants is also possible. For instance, the SEC has scrutinized whether certain order types are being used properly: "If Latour is using a set of ISOs [intermarket sweep orders] to display a post-only order, it must comply with the rules adopted by exchanges under Rule 610 of Reg NMS and send ISOs to remove any equal- or better-priced protected quotations." Latour Trading LLC, Exchange Act Release No. 76,029, at 6 (Sept. 30, 2015) (settled proceeding), http://www.sec.gov/litigation/admin/2015/34-76029.pdf [https://perma.cc/9D9G-382C]. The SEC also observed that "Latour received $2,784,875 in gross trading profits and exchange rebates from its non-compliant ISOs" and concluded that "Latour violated Rule 611(c) [of Regulation NMS] because it failed to take reasonable steps to establish that its ISOs met the requirements set forth in Rule 600(b)(30)." *Id.* at 13, 15.

merely using a certain functionality after having received detailed selective disclosure about its features, let alone an imprecise tip or a possibly distorted industry rumor. The crux is in *an intention to use specific and certain discrepancies* between documented and actual features, which, once again, needs to be compared to a less questionable hypothetical of merely undocumented, but not contradictory, features. If the very purpose of using a certain functionality is to circumvent—and operate contrary to—the existing formal documentation in order to obtain a trading advantage, that logically suggests the existence of securities fraud. Actual knowledge as a prerequisite for intent is all but guaranteed to be present. After all, a firm requesting or designing a certain functionality would surely scrutinize the applicable formal documentation once this functionality is adopted by the trading venue in question, and, more generally, a market participant is likely to be aware of any discrepancy simply on the basis of selective disclosure. Moreover, such practices may be invisible and thus repetitive, resulting in stealth transfers of wealth likely to be diffused among numerous market participants, which could even be hardly traced and reconstructed in market data and thus be virtually undetectable to an outside observer. This stealthiness is a critical feature of many HFT practices in question, which also points in the direction of their fraudulent nature.[81] Once again, the difference between SRO and non-SRO trading venues should not matter with respect to liability of market participants utilizing discrepancies between the official documentation and the actual functionality.

A helpful analogy is offered by the fraud-on-the-market doctrine, which serves as a means for plaintiffs to prove their losses from affirmative misrepresentations and, in some instances, omissions without demonstrating specific reliance but instead presuming "the integrity of the market price."[82] A comparison proposed by the author is the concept of the *integrity of the trading process*, defined as the compliance with the applicable trading protocol by all market participants combined with the accuracy and transparency of that protocol, which would preclude systematic

---

[81] *See also* Dolgopolov, *Providing Liquidity in a High-Frequency World*, *supra* note 77, at 340–41 (stating that "[t]he reach of the federal antifraud prohibition is especially relevant when such violations remain undetected" and pointing out that "[a] transaction's alternative terms may not be transparent").

[82] Basic Inc. v. Levinson, 485 U.S. 224, 247 (1988).

informational advantages exploited by any group.[83] Arguably, it may be said that the marketplace as a whole relies on the integrity of the trading process, as a prerequisite for a proper *interaction* of orders. This concept has relevance for the existence of investor harm just as the integrity of the market price, a concept divorced from the realities of the applicable trading protocol. Both of these approaches address the mechanism of price formation—either from a macro or a micro perspective—in the context of informational asymmetries, but neither one requires an idealized informational parity with respect to securities themselves. Likewise, both of these approaches could fit into *Basic*'s rhetorical question about "roll[ing] the dice in a crooked crap game."[84] Moreover, the link between the wrongdoers' trading gains and other market participants' losses is much stronger in the case of the concept of the integrity of the market process compared to its counterpart.[85]

Interestingly, one court's observation from a not-so-distant and yet very technologically simple era offers the following forward-looking observation made in the context of the fraud-on-the-market doctrine:

---

[83] For the author's earlier discussion of the concept of the integrity of the trading process in the context of trading obligations and privileges of market makers established by SRO rules, see Dolgopolov, *Providing Liquidity in a High-Frequency World, supra* note 77, at 342. In fact, the issue of such trading obligations and privileges remains a concern. For instance, Virtu Financial was recently censured for "failing to maintain continuous, two-sided trading interest in approximately 57,045 instances" on NYSE Arca, while being reminded that, "[b]ecause Market Makers receive benefits for their registration in particular symbols, it is essential that they uphold the quoting obligations associated with their registered symbols, and provide market [liquidity] in the form of continuous quoting." NYSE Regulation v. Virtu Fin. BD LLC, Proceeding No. 2016-07-01267, at 2 (Office of Hearing Officers, Fin. Auth. Regulatory Auth., Inc. Dec. 20, 2016) (settled proceeding), https://www.nyse .com/publicdocs/nyse/markets/nyse-arca/disciplinary-actions/2016/Virtu%20 Financial%20-%20AHP%20Arca%20Decision.pdf [https://perma.cc/5FLL-8BN9].

[84] *Basic*, 485 U.S. at 247 (quoting Schlanger v. Four-Phase Sys. Inc., 555 F. Supp. 535, 538 (S.D.N.Y. 1982)).

[85] For a summary of concerns about the fraud-on-the-market doctrine, such as a weak link between wrongdoers' trading gains and other market participants' losses, the absence of the requirement that wrongdoers must engage in trading activities themselves, and windfall gains of innocent parties, see A.C. Pritchard, Halliburton II*: A Loser's History*, 10 DUKE J. CONST. L. & PUB. POL'Y 27, 34–39 (2015).

> Just as information about a specific security is reflected in the price of that security, so too is information about the manner in which transactions would be completed reflected in the price of securities generally. Plaintiffs may be presumed to have relied upon information indicating that securities would be matched by specialists, as opposed to bought and sold at artificially high and low prices.[86]

While there could be some debate about the correctness of using the word "artificial," at least in the sense of a lasting price effect, this statement provides a valuable perspective on modern iterations of such practices, including mechanics of the order matching process, such as the phenomenon of queue jumping, and shows the relevance of discrepancies between disclosed and actual features in the zero-sum game of short-term trading.

Importantly, the phenomenon of secret arrangements is not confined to the order type controversy. Other layers of rules of individual trading venues, albeit sometimes less precise ones, may be affected. One illustration is a settlement between the SEC and Credit Suisse focused on Light Pool, the latter's ECN, as it was "represented to clients and existing and prospective subscribers that all Light Pool participants, including HFTs, would be classified pursuant to an objective formula and those 'participants,' 'traders,' or 'clients' who were classified as opportunistic would 'lose access to' or be 'kicked out.'"[87] In reality, the relevant Alpha Formula was "applied ... separately to the order flow submitted under each system ID of a subscriber," thus allowing such a subscriber to retain direct access.[88] Furthermore, "[s]ubscribers could request different connections to Light Pool, for example, to designate different trading strategies that they may employ for trading in Light Pool."[89] Similarly, Credit Suisse

> gave direct subscribers—including some HFTs—the opportunity to improve their trading to avoid being labeled 'opportunistic.' [Credit Suisse] made mid-monthly calls to direct subscribers

---

[86] *In re* NYSE Specialists Sec. Litig., 405 F. Supp. 2d 281, 318–19 (S.D.N.Y. 2005).

[87] Credit Suisse Sec. (USA) LLC, Securities Act Release No. 10,014, Exchange Act Release No. 77,003, at 6 (Jan. 31, 2016) (settled proceeding), https://www.sec.gov/litigation/admin/2016/33-10014.pdf [https://perma.cc/3AXC-QB2A].

[88] *Id.*

[89] *Id.*

> whose flow was in danger of being characterized as opportunis-
> tic. This practice allowed direct subscribers to improve their
> flow to avoid an opportunistic score at month-end.[90]

Overall, this settlement paints a picture of inaccurate represen-
tations of certain functionalities and selective disclosure practices.
Moreover, several similar settlements address the issue of inaccu-
rate and inconsistent classification of opportunistic/aggressive/toxic
trading in other ATSs, although the apparent existence of sym-
biotic relationships between trading venues and preferred mar-
ket participants was not backed up by any specific evidence of
selective disclosure practices.[91] Once again, given a varying speci-
ficity, if not vagueness, of applicable representations, the path to
attaching liability is likely to depend on the existence of clear
discrepancies with the disclosed trading protocol and the intent
of preferred market participants to use such discrepancies.

III. GLITCHES AND GAMING

Another type of questionable practice comes under the
umbrella of "gaming," which is often understood as the exploita-
tion of "glitches" in the applicable trading protocol on the level of
individual trading venues. The term "gaming"—or, in some in-
stances, more accurately described as "reverse engineering"—
does not need to overlap with secret handshakes, as a trading
venue's deliberate involvement is typically nonexistent. In this
scenario, there is no collusion between a trading venue and pre-
ferred market participants, and such discrepancies may arise
merely because of that trading venue's negligence or, in some
instances, even randomness, with such bugs being discovered
fortuitously, searched for systematically, or, quite importantly,
revealed by inside sources. Furthermore, it is natural to expect
unintended consequences created by the very indeterminacy of

---

[90] *Id.*

[91] For several examples, see Barclays Capital Inc., Securities Act Release
No. 10,010, Exchange Act Release No. 77,001 *passim* (Jan. 31, 2016) (settled
proceeding), https://www.sec.gov/litigation/admin/2016/33-10010.pdf [https://
perma.cc/ZY4U-NW6B]; Credit Suisse Sec. (USA) LLC, Securities Act Release
No. 10,013, Exchange Act Release No. 77,002 *passim* (Jan. 31, 2016) (settled
proceeding), https://www.sec.gov/litigation/admin/2016/33-10013.pdf [https://
perma.cc/JA4G-NX8E].

complex rules frequently combined with inadequacy of disclosure. As observed in the context of the order matching process, "The highly intertwined matching logic of a venue makes it difficult to ensure that one component of a trading system does not 'overrule' another component resulting in unintended behaviours of the system."[92] Furthermore, some discovered "glitches" could actually be a result of a trading venue's selective disclosure of hidden features to *other* market participants rather than unintended consequences.

To the extent that "gaming" captures the exploitation of unintended consequences or the very nature of complexity, including the phenomenon of conflicting rules disclosed in the same fashion, it is very problematic to outlaw this conduct ex ante. A mere opportunistic exploration, which could be described as "testing the limits" or, in some instances, "regulatory arbitrage," is inevitable. The issue of loopholes, generally speaking, is not a new one. As described by one court in an area far removed from securities regulation, "Taking advantage of loopholes in laws is a time-honored American tradition. It is not a deceitful or unfair means to an end."[93] Likewise, merely taking advantage of loopholes in rules of trading venues suggests the same outcome. Accordingly, the use of certain undocumented features in the absence of any discrepancies with formal documentation would be a very difficult case for liability.

On the other hand, there is one scenario suggesting the exposure to liability in connection with securities fraud. More specifically, some industry rumors point to HFTs "figuring out" order matching engines' inner workings in order to exploit undocumented features that are *contrary* to the applicable rulebook, technical specifications, and other disclosures. While there could be some form of liability for unauthorized access, no true "hacking" is required for such practices. Indeed, there is some awareness within the industry that "buggy" or "buggier" trading venues may serve as a source of trading profits. Likewise, there have been rumors of former exchange employees leaving for HFT firms and bringing the applicable order matching engine's

---

[92] IGNATOVICH & PASSMORE, *supra* note 18, at 11.

[93] Buffalo S. R.R. Inc. v. Vill. of Croton-on-Hudson, 434 F. Supp. 2d 241, 254 (S.D.N.Y. 2006).

source code with them in order to identify any exploitable glitches. Once again, the very feasibility of turning any discrepancies to one's own advantage in the trading process could be a powerful competitive tool. Moreover, the scenario of glitches somewhat resembles the order type controversy in the sense that specific order types or their modifiers are likely be involved. Likewise, this type of conduct may be associated with inadequate disclosure practices of trading venues.

Thus, overall, the nature of the underlying violations lies in an intention to use discrepancies between documented and actual features, which could trigger liability for securities fraud. In other words, from the standpoint of liability, the difference between an HFT taking advantage of selective disclosure and an HFT independently aware of the discrepancy in question may not be meaningful under certain circumstances. Once again, the concept of the integrity of the trading process is a useful analogy. There would be serious disruptive implications if the multitude of market participants is expected not to rely on the integrity of the applicable trading protocol, as properly disclosed rules of the game, and identify glitches capturing discrepancies between documented and actual features on a self-help basis. Even if any such discrepancy could have been discovered by other market participants, that does not make this piece of information *accessible* to the general public, given the uncertainty of another discovery and potential costs associated with a deliberate search. While using security- or issuer-specific information under otherwise similar circumstances would have been legitimate, taking advantage of *discrepancies* with the general rules governing the trading process itself is much more problematic.

IV. IDENTIFYING (OR REDEFINING) MARKET MANIPULATION

The doctrine of market manipulation is not necessarily easy to apply to new practices, although some modern iterations of manipulative trading fit the traditional pattern. For instance, the much-discussed practices of "spoofing" and "layering" have been classified as manipulative in legal actions with at least *some* connection to HFT, but such instances seem to be confined

to the futures and commodities space.[94] In securities markets, it remains to be seen whether larger players in the HFT space have been involved in manipulative schemes, such as spoofing and layering, and how common such practices are.[95] Yet, overall, a more pressing question is whether a host of HFT practices could even be properly classified as market manipulation. Some practices, such as those solely based on transparent speed-related advantages, are problematic to fit into the definition of market manipulation, and one also needs to be mindful of distinctions between market manipulation, price discovery, and liquidity provision.[96] However, a pivotal appellate decision recognized the

---

[94] *See, e.g.*, United States v. Coscia, 177 F. Supp. 3d 1087, 1090–93 (N.D. Ill. 2016) (denying the motion for judgment of acquittal and a new trial of a defendant who "implemented a high-frequency trading program that essentially enabled him to manipulate the commodities markets" with respect to the charges of fraud and spoofing under the Commodity Exchange Act of 1936). For additional examples of market manipulation, as well as "spoofing" as a separately defined violation in the Dodd-Frank Act of 2010, from the futures and commodities space, which implicated both lone traders and established firms and involved tools of varying technological sophistication, see CFTC v. Oystacher, 203 F. Supp. 3d 934 (N.D. Ill. 2016); CFTC v. Wilson, 27 F. Supp. 3d 517 (S.D.N.Y. 2014); Citigroup Glob. Mkts. Inc., CFTC No. 17-06 (Jan. 19, 2017) (settled proceeding), http://www.cftc.gov/idc/groups/public/@lren forcementactions/documents/legalpleading/enfcitigroupglobalorder011917.pdf [https://perma.cc/FUK9-LL7D]; Consent Order of Permanent Injunction, Civil Monetary Penalty, and Other Equitable Relief Against Navinder Singh Sarao, CFTC v. Nav Sarao Futures Ltd., No. 1:15-cv-03398 (N.D. Ill. Nov. 14, 2016). For the above-mentioned prohibition of spoofing, see Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 747, 124 Stat. 1376, 1739 (2010) (codified at 7 U.S.C. § 6c(a)(5)), https://www.gpo.gov /fdsys/pkg/PLAW-111publ203/pdf/PLAW-111publ203.pdf [https://perma.cc/G4 5Y-6DL4]. For an extensive discussion of market manipulation and disruptive trading practices relating to HFT and automated trading more generally in the futures and commodities space, see Gregory Scopino, *Do Automated Trading Systems Dream of Manipulating the Price of Futures Contracts?: Policing Markets for Improper Trading Practices by Algorithmic Robots*, 67 FLA. L. REV. 221 (2015).

[95] Interestingly, an earlier iteration of spoofing in securities markets, also known as "auto-execution manipulation," abused the automated execution feature offered by market makers, and it could be done through manual means. Terrance Yoshikawa, Exchange Act Release No. 53,731, 87 SEC Docket 2580, 2586 & n.36 (Apr. 26, 2006).

[96] For instance, one HFT practice difficult to characterize as truly manipulative is "exploratory trading," which has been described as "a form of costly

fitness of the allegations that "sufficiently plead that the exchanges misled investors by providing products and services [i.e., colocation services, private data feeds, and complex order types] that artificially affected market activity," while pointing out that these allegations included claims about inadequate disclosure for such products and services.[97]

Accordingly, it becomes critical to identify the scope of market manipulation as such. As summarized by a leading commentator, "The essence of the fraud in a Section 10(b) manipulation case is the creation of an artificial price."[98] Logically interpreted, the term "artificial price" means, with some inevitable vagueness, pushing the market price in the "wrong" direction or delaying a move in the "correct" direction. Not being satisfied by this restriction, one court engaged in doctrinal struggles in its dictum pronouncement in order to bring additional practices under the umbrella of market manipulation: "There is nothing in the text of Section 10(b) that limits manipulation (a concept which, thanks to the boundless creativity of capitalism, can include

---

information acquisition [which] does not generate information that relates directly to the traded asset's fundamental value, but that pertains rather to unobservable aspects of market conditions that could eventually become public, ex-post, through ordinary market interactions." Adam D. Clark-Joseph, Exploratory Trading 48–49 (Dec. 31, 2014) (unpublished manuscript) (on file with author), https://www.aeaweb.org/aea/2015conference/program/retrieve .php?pdfid=1133 [https://perma.cc/78QN-BS46].

[97] City of Providence v. BATS Global Mkts., Inc., 878 F.3d 36, 49 (2d Cir. 2017). Although not discussed by the court, one analogy from the era predating the rise of exchange-administered order matching engines is offered by *In re* NYSE Specialists Securities Litigation, 405 F. Supp. 2d 281 (S.D.N.Y. 2005), which recognized a sufficient legal claim for market manipulation with respect to the practices essentially amounting to order matching abuses by exchange specialists that combined the roles of order matching agents and market participants through their principal trading activities. *Id.* at 292, 311–16.

[98] JERRY W. MARKHAM, LAW ENFORCEMENT AND THE HISTORY OF FINANCIAL MARKET MANIPULATION 392 (2014). This commentator emphasized the importance of distinguishing the intended, actual, and potential artificial price impact from a doctrinal standpoint, while criticizing the seeming overreach of regulatory agencies "to attack any market practice they deem undesirable." *Id.* at 391–93. The following analogy is also worth mentioning: "Economically, it can be said that every order affects the market, but that is like saying that the air stirred by a butterfly's wings in Africa gave rise to a wind that became a hurricane that devastated America's coast." *Id.* at 392.

many kinds of conduct) to *price* manipulation."[99] However, in addition to the appellate decision in the same lawsuit, the weight of the existing case law, without any significant deviations, points to the necessity of an artificial impact on a security's price,[100] and taking this factor out of the equation would dissolve the existing concept of market manipulation. The courts have also recognized that a mere price impact is not by itself evidence of market manipulation,[101] given that virtually every transaction

---

[99] Rabin v. NASDAQ OMX PHLX LLC, 182 F. Supp. 3d 220, 244 (E.D. Pa. 2016).

[100] The appellate decision maintained that "[t]o state a claim for manipulation under [Section 10(b) of the Exchange Act and Rule 10b-5], a plaintiff must show [conduct] for the purpose of artificially depressing or inflating the price of the security." Rabin v. NASDAQ OMX PHLX LLC, No. 16-2511, 2017 U.S. App. LEXIS 21093, at *8 (3d Cir. Oct. 25, 2017); *see also* Santa Fe Indus., Inc. v. Green, 430 U.S. 462, 477 (1977) (stating that manipulative practices under Section 10(b) of the Exchange Act and Rule 10b-5 "artificially affect[ ] market activity in order to mislead investors" and putting this definition within "the full range of ingenious devices that might be used to manipulate securities prices"); Ernst & Ernst v. Hochfelder, 425 U.S. 185, 199 (1976) (stating that, in the context of Section 10(b) of the Exchange Act and Rule 10b-5, "the word 'manipulative' ... connotes intentional or willful conduct designed to deceive or defraud investors by controlling or artificially affecting the price of securities"); Fezzani v. Bear, Stearns & Co., Inc., 716 F.3d 18, 25 (2d Cir. 2013) (characterizing market manipulation covered by Section 10(b) of the Exchange Act and Rule 10b-5 as "when an artificial or phony price of a security is communicated to persons who, in reliance upon a misrepresentation that the price was set by market forces, purchase the securities"); *In re* Initial Pub. Offering Sec. Litig., 297 F. Supp. 2d 668, 674 (S.D.N.Y. 2003) (stating that "[a] market manipulation is a discrete act that influences stock price [relative to] its true value").

[101] *See, e.g.*, GFL Advantage Fund, Ltd. v. Colkitt, 272 F.3d 189, 205 (3d Cir. 2001) (endorsing "a construction [that] permits courts to differentiate between legitimate trading activities that permissibly may influence prices, such as short sales, and 'ingenious devices that might be used to manipulate securities prices'" (quoting *Santa Fe*, 430 U.S. at 477)); United States v. Mulheren, 938 F.2d 364, 368 (2d Cir. 1991) (applying, in the context of Section 10(b) of the Exchange Act and Rule 10b-5, the prosecution's theory that, "[w]hen the transaction is effected for an investment purpose ... there is no manipulation, even if an increase or diminution in price was a foreseeable consequence of the investment"); Chris-Craft Indus., Inc. v. Piper Aircraft Corp., 480 F.2d 341, 383 (2d Cir. 1973) (stating that "[t]he [federal] securities laws do not proscribe all buying or selling which tends to raise or lower the price of a security" and that, "[s]o long as the investor's motive in buying or

has some potential marginal impact on the price formation pro-
cess. A related point is that artificial price changes need to be
matched to primary violators, as illustrated by a key appellate
assertion that being a primary violator does not require *direct*
participation "in any manipulative 'trading activity'" and that "the
plaintiffs [did] not assert that the exchanges [by virtue of provid-
ing products and services to traders] simply facilitated manipu-
lative conduct by the HFT firms."[102]

However, stretching the doctrine of market manipulation
is not even necessary, even if the underlying practices look ma-
nipulation-like in terms of boosting trading volume, which might
suggest an element of false appearances/deception. Recognizing
that a security's price is not the only dimension of loss, the regu-
lators have been on the path of finding fraudulent conduct even
in the absence of any price impact when certain rules of trading
venues are flaunted or abused—not just directly broken—in order
to secure/reallocate an economic benefit that otherwise would not
have accrued and likely at the expense of others. Of course,
drawing a line between mere "gaming" and "abuse," short of un-
ambiguous direct violations, is a concern, but the ultimate goals
of the rule in question may provide some guidance in a case-by-case
analysis. For instance, the SEC characterized as securities fraud
offsetting transactions designed to obtain market data revenues
paid out by the Consolidated Tape Association ("CTA") and
shared by NASDAQ with member firms, maintaining that "[such]
trades through MarketXT [the affiliated ECN] caused Nasdaq to
receive more than its proper share of market data revenue,
thereby defrauding other CTA participants."[103] Likewise, the SEC

---

selling a security is not to create an artificial demand for, or supply of, the
security, illegal market manipulation is not established").

[102] *City of Providence*, 878 F.3d at 49–52. By contrast, the reversed deci-
sion by the district court stated that the scrutinized actions by the exchanges
"merely enabled an HFT firm to execute a transaction, and it was the trans-
action itself that caused the allegedly artificial effect on the market [rather
than] the Exchanges' provision of co-location services, proprietary data feeds,
and complex order types to the HFT firms." *In re* Barclays Liquidity Cross &
High Frequency Trading Litig., 126 F. Supp. 3d 342, 362 (S.D.N.Y. 2015).

[103] Irfan Mohammed Amanat, Exchange Act Release No. 54,708, 89 SEC
Docket 672, 678 (Nov. 3, 2006), *aff'd*, 269 F. App'x 217 (3d Cir. 2008). Moreover,
the SEC emphasized that it had not been alleged that such "wash trading
affected the price of the [exchange-traded funds]," as opposed to the allegation

applied the same characterization to mismarking "professional" and "customer" designations that resulted in distorted determination by securities exchanges of "which orders received priority of execution and the amounts of all related transaction credits and debits, including liquidity rebates, 'take' fees, transaction costs, and cancellation fees," deprived these securities exchanges of certain fees, and "unfairly disadvantaged other professional market participants over whom the Respondents' 'customer' orders wrongly received priority of execution for orders at the same price."[104] Importantly, these examples do not even involve informational asymmetries pertaining to specific functionalities, and the existence of such asymmetries would have further strengthened the case for characterizing underlying practices as securities fraud.

Finally, going back to the practices relevant to the current market structure crisis, including the order type controversy, the reach of market manipulation as such is not essential: "[T]he scope of securities fraud is much wider than market manipulation. Consider that *riding price changes* with the assistance of inadequately documented functionalities is different from *creating*

---

that "Amanat used wash and matched trades to defraud Nasdaq and other CTA participants." *Id.* at 678 n.33. *Amanat* should be compared to—and distinguished from—*Rockies Fund, Inc. v. SEC*, 428 F.3d 1088 (D.C. Cir. 2005), in which the court concluded that "neither of [the practices of matched orders and wash sales] alone constitutes a securities violation," including the reach of Section 10(b) of the Exchange Act and Rule 10b-5, *id.* at 1093, despite their inherent trading volume-boosting nature. The court did not establish the existence of any "manipulative price setting" or any other artificial price impact, *id.* at 1094–95, while pointing out that at least some of the scrutinized transactions might have been motivated by liquidity needs, *id.* at 1095. In other words, the very purpose of trading volume-boosting strategies appears to be important, for instance, whether they take place at the expense of other market participants. Turning back to *Amanat*, the trading strategy in question ran contrary to the practice followed by "CTA participants [that] wash trades and matched orders [are] illegitimate and non-qualifying for purposes of allocating market data revenues" and thus require reallocation, and, in fact, NASDAQ had made a corresponding reimbursement. *Amanat*, 89 SEC Docket at 677 n.24, 678 n.29.

[104] Behruz Afshar, Securities Act Release No. 10,094, Exchange Act Release No. 78,043, Investment Company Act Release No. 32,144, at 11–12, 17 (June 13, 2016) (settled proceeding), https://www.sec.gov/litigation/admin/2016/33-10094.pdf [https://perma.cc/TH8B-RNEB]. It should be noted that a *separate* charge in the same proceeding alleged "manipulative trading known as 'spoofing' to collect rebates from the PHLX." *Id.* at 3.

artificial price patterns in order to profit from them, which is the essence of market manipulation."[105] In fact, no radical—and potentially problematic—doctrinal restructuring would be required, and, even as a mere prediction, any shift to non-price-based market manipulation is unlikely to materialize in the foreseeable future. At the same time, novel methods of market manipulation, which may or may not be based on market structure-embedded informational asymmetries, still need to be monitored for. In fact, having a market structure perspective on short-term/small-scale price variations, which may appear different from more traditional examples of market manipulation, is indeed warranted for gatekeepers, and novel applications and iterations of the doctrine of market manipulation may provide additional legal tools for any litigant.

CONCLUSION

While the HFT segment of the securities industry has not yet been truly shaken by massive litigation, targeting certain questionable practices as securities fraud might be both desirable and viable, with private lawsuits playing an important role. In fact, a gamut of informational asymmetries, both deliberate or accidental, has been deeply rooted in the evolving market structure and resulted in substantial stealth wealth transfers. The ability to pick up "bread crumbs" through means like queue jumping has a clear economic value obtained at the expense of other market participants, even in instances when there is no truly artificial impact on the market price as such. Some players in the HFT segment are not just accidental beneficiaries and skillful navigators of disruptive changes and complexity defining the current market structure crisis. Certain HFT practices are in fact drivers of this crisis, often greased by secret arrangements with trading venues, and some bad actors may be characterized as primary violators guilty of securities fraud. Arguably, the scope of primary violations is not as restrictive as it may seem. The proposed approach is not necessarily grounded in the existence of a conspiracy between a trading venue and preferred market participants. Instead, this approach is based on specific trading activities intentionally taking advantage of certain functionalities that act differently

---

[105] BODEK & DOLGOPOLOV, *supra* note 1, at 125.

than—and thus contrary to—their official documentation, with such discrepancies constituting the very "edge."

Doctrinal challenges to attaching liability to HFTs are too palpable to be ignored. However, the proposed approach to cover as securities fraud—although not in a mechanic way—violations and abuses of the applicable trading protocol, including rules of individual trading venues, would not be unprecedented. This approach to liability, if carefully crafted and balanced, would not open the proverbial floodgates of private lawsuits alleging securities fraud or mandate a radical doctrinal restructuring of market manipulation. The very requirement of discrepancies between documented and actual features, as opposed to gray areas, would help isolate fraudulent conduct. Likewise, the line between breaking—or truly abusing—the rules governing the applicable trading protocol and just taking advantage of them would be preserved. Furthermore, a mere usage of a given functionality would not be sufficient to constitute securities fraud: quite likely, the limiting factor would be one's *intent* to use the discrepancy in question. As always, taking into account the ever-present tension between flexible and restrictive interpretations of the scope of securities fraud and the reach of relevant legal tools, some judicial restraint would serve the end goal of catching fraudulent conduct as such.

An important question is why HFTs have not become an important target in litigation centered on securities fraud. A potential answer lies in difficulties with demonstrating the state of mind, intent, tit-for-tat/conspiracy-like arrangements with trading venues, and knowledge of the inadequacy of formal disclosure, including specific communications that amount to a smoking gun. Furthermore, many practices in question are solely conduct-based and do not involve specific public statements. Overall, showing the intent of using the functionality in question to utilize discrepancies between documented and actual features is a high bar, although uncovering an abusive algorithm could serve as solid evidence. Of course, a threat of private litigation is not the only deterrent—and not necessarily the most effective one, and this factor stresses the significance of market reform. Also, not all problematic trading practices could pass the hurdle of being characterized as fraudulent, as illustrated by the SEC's focus on creating regulatory restraints on disruptive trading

rather than using the existing legal tools.[106] Similarly, as a bird's eye view of the SEC's recent enforcement program, the regulators have often preferred identifying technical violations, as opposed to asserting the existence of deliberate wrongdoing in the form of securities fraud, and employed a cautionary approach of targeting trading venues alone instead of specific market participants.

Finally, the proposed approach to liability and the current market structure crisis itself may be viewed through the lens of the concept of the integrity of the trading process. Given the zero-sum nature of short-term trading, the integrity of the trading process is neither an overreaching concept devoid of meaning nor a merely aspirational ideal. If needed, informational asymmetries that amount to rent-seeking for selected groups of market participants need to be addressed though liability for securities fraud. Looking beyond the crisis of today, this framework would not lose its relevance, especially given that the modern electronic marketplace's complexity is expected to last into the foreseeable future and the persistent lure of secret arrangements and exploitable glitches.

---

[106] *See* Mary Jo White, Chairman, U.S. Sec. & Exch. Comm'n, Enhancing Our Equity Market Structure: Remarks at Sandler O'Neill & Partners, L.P. Global Exchange and Brokerage Conference (June 5, 2014), http://www.sec .gov/News/Speech/Detail/Speech/1370542004312#.U99FBGN5WEc [https:// perma.cc/NU39-HVGZ] (stating that the contemplated anti-disruptive rule "will need to be carefully tailored to apply to active proprietary traders in short time periods when liquidity is most vulnerable and the risk of price disruption caused by aggressive short-term trading strategies is highest"); *see also Regulatory Reforms to Improve Equity Market Structure: Hearing Before the Subcomm. on Sec., Ins., & Inv. of the S. Comm. on Banking, Hous., & Urban Affairs*, 114th Cong. 33 (2016) (prepared statement of Stephen Luparello, Director of the Division of Trading and Markets, the U.S. Securities and Exchange Commission), https://www.gpo.gov/fdsys/pkg/CHRG-114shrg99832 /pdf/CHRG-114shrg99832.pdf [https://perma.cc/K6HS-FRUD] (stating that "SEC staff is developing a recommendation for the Commission" for the contemplated anti-disruptive rule).