

V. *The Revolt against High-Frequency Trading: From Flash Boys, to Class Actions, to IEX*

A. Introduction

Over the last few years, there has been a backlash against high-frequency trading (HFT). HFT generally refers to the increasingly widespread practice of using algorithmic programs to execute trades based on split-second changes in market conditions.¹ HFT, once regarded as beneficial because academics believed it provided liquidity to the markets, is now under public scrutiny.² Michael Lewis's *Flash Boys*, published in 2014, contended that the market is rigged in favor of HFT.³ *Flash Boys* was published in a time when Wall Street and the public had a growing discomfort with HFT, which was spurred partially because of uncertainty regarding how HFT actually affects the market.⁴ Multiple class action suits

¹ *High-Frequency Trading – HFT*, INVESTOPEDIA, <http://www.investopedia.com/terms/h/high-frequency-trading.asp> [<https://perma.cc/95GK-97PB>].

² There have been eight congressional hearings over the last few years addressing HFT, in addition to Department of Justice, Federal Bureau of Investigation, U.S. Securities and Exchange Commission, and U.S. Commodities Futures Trading Commission investigations. Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *The New Stock Market: Sense and Nonsense*, 65 DUKE L.J. 191, 195 (2015); Michael T. Gass & Michael R. Dube, *High-Frequency Trading Cases Slow To Take Shape*, LAW360 (Feb. 6, 2015), <http://www.law360.com.ezproxy.bu.edu/articles/619057/high-frequency-trading-cases-slow-to-take-shape> [<https://perma.cc/H2YN-YZGE?type=image>] (“The SEC, other regulators, and private plaintiffs have expressed concerns that HFT gives its practitioners unfair advantages in the form of, among other things, inside information about order activity and the ability to front-run or otherwise manipulate trading in a manner that benefits themselves at the expense of other market participants.”).

³ Fox, Glosten & Rauterberg, *supra* note 2, at 193 (“‘The United States stock market, the most iconic market in global capitalism, is rigged.’ . . . Particularly sharp criticism has been aimed at high-frequency traders (HFTs), which are said to use their speed in finding out changes in the market and in altering their own orders to take advantage of other traders in the market.”).

⁴ *Id.* at 194-96 (“Polls now indicate that ‘roughly two-thirds of Americans believe the stock market unfairly benefits some at the expense of others’ . . . we still lack a comprehensive framework for understanding the new stock market.”).

against exchanges ensued, alleging that exchanges favored HFTs over other players in the market due to the exchanges' fee structures.⁵ The protagonist in *Flash Boys*, Brad Katsuyama, created Investors Exchange, LLC (IEX), an Alternative Trading System (ATS)⁶ aimed at protecting investors and promoting transparency in the markets.⁷ IEX filed an application with the U.S. Securities and Exchange Commission (SEC) to become a national securities exchange in 2015, and in June 2016, the SEC granted IEX's application.⁸ IEX's application prompted a big debate over HFT's role in the market, in particular regarding whether a "speed bump" would be beneficial to investors or detrimental to the market generally.⁹ The SEC requested more time to evaluate IEX's application because of the controversies

⁵ William Foley, James Thompson & Daniel Dunne, *Exchanges Prevail in Flash Boys-Inspired Suits*, ORRICK, HERRINGTON (Dec. 17, 2015), <http://blogs.orrick.com/securities-litigation/2015/12/17/exchanges-prevail-in-flash-boys-inspired-suits/> [<https://perma.cc/KX49-3SNY>].

⁶ ATSs are off-exchange trading venues that provide an alternate source of liquidity with very limited public disclosure or subscriber oversight, and they are commonly known as dark pools. *See, e.g.*, SEC. & EXCH. COMM'N, ALTERNATIVE TRADING SYSTEMS: DESCRIPTION OF ATS TRADING IN NATIONAL MARKET SYSTEM STOCKS (2013), *available at* https://www.sec.gov/marketstructure/research/ats_data_paper_october_2013.pdf [<https://perma.cc/J2XC-9RZD>]. ATSs function like exchanges, but they are subject to different regulation than exchanges by the U.S. Securities and Exchange Commission and the Financial Industry Regulatory Authority. *IEX - About*, IEX GROUP, INC., <http://www.iextrading.com/about/> [<https://perma.cc/SR3T-62LC>] [hereinafter *IEX*].

⁷ *IEX*, *supra* note 6.

⁸ Investors Exchange Notice of Designation of Longer Period, Exchange Act Release No. 34-77406, 2016 SEC LEXIS 1040 (Mar. 18, 2016); Press Release, Sec. & Exch. Comm'n, SEC Approves IEX Proposal to Launch National Exchange, Issues Interpretation on Automated Securities Prices (June 17, 2016), *available at* <https://www.sec.gov/news/pressrelease/2016-123.html> [<https://perma.cc/N9BL-VZWC>].

⁹ Jeremy C. Owens, *Flash Boys' Star IEX's New Battle Plan Against High-Frequency Trading*, MARKETWATCH (Jan. 21, 2016) <http://www.marketwatch.com/story/flash-boys-star-iex-no-compromise-on-exchange-application-2016-01-20> [<https://perma.cc/ELQ5-P8BH>] ("Right now, we have 330-something [comments], so it's gotten kind of crazy. We have more comments than every exchange in the history of the United States combined. Nasdaq was the second largest with 97.").

surrounding the “speed bump” and its potential conflict with the Securities Exchange Act and the rules under it.¹⁰

This article discusses the role of HFT in the market, the reasons why critics argue HFT is detrimental to the market, and the arguments for and against HFT generally. Part B provides general background on HFT, its role in the capital markets, and the current regulatory scheme. Part C discusses the recent backlash against HFT, focusing on the class action lawsuits that followed Michael Lewis’s book *Flash Boys*, and IEX’s application to become an exchange intended to deter HFT’s detrimental practices. Part D concludes and notes that the SEC must examine HFT’s impact on the market and other players in the market before implementing any new regulations.

B. Background on High-Frequency Trading

1. High-Frequency Trading’s Role in the Market

Today’s financial market is fully automated, fragmented,¹¹ and largely dominated by HFT.¹² HFT has replaced traditional auction-like floor trading where traders compete on price.¹³ HFT’s focus is now to compete on time.¹⁴ The SEC has promulgated rules

¹⁰ Investors Exchange Notice of Designation of Longer Period, *supra* note 8.

¹¹ The United States has eleven exchanges and around fifty dark pools. Fox, Glosten & Rauterberg, *supra* note 2, at 198 (“Today, any stock is potentially traded in each of almost *sixty* competing venues: eleven exchanges and almost fifty dark pools.”); Matt Levine, *Don’t Panic! Market Fragmentation Will Save You!*, BLOOMBERG VIEW (July 8, 2015, 2:26 PM), <http://www.bloombergvew.com/articles/2015-07-08/don-t-panic-market-fragmentation-will-save-you-> [<https://perma.cc/4RXV-DWEC>].

¹² Fox, Glosten & Rauterberg, *supra* note 2, at 193-94 (“HFTs are believed now to participate in about half of all trades.”).

¹³ *Id.* at 198 (explaining that there is no longer floor trading—that “[t]he NASDAQ dealers and the NYSE specialists are gone”).

¹⁴ Chen Yao & Mao Ye, Tick Size Constraints, High-Frequency Trading, and Liquidity 1-2 (June 10, 2015) (working paper) (*available at* https://wpweb2.tepper.cmu.edu/wfa2014/wfsecure/upload/2015_PA_9883_55_959871_156433.pdf) [<https://perma.cc/ZZ43-XMB7>] (“The uniform one-cent tick size drives speed competition in liquidity provision The higher rents are then dissipated through time priority, which means that limit orders at the same price are executed in the order in which they are

that govern price increments for quotes, known as decimalization, and some argue this has led to price competition, which has resulted in HFTs trading in as little as nanosecond increments.¹⁵

There are many types of HFT firms and practices, but a common type is HFT market makers.¹⁶ HFT market makers operate based on algorithms that balance supply and demand.¹⁷ Therefore, when a buyer buys a certain amount of shares at any given price, the HFT uses that information to change the price it is quoting in the market.¹⁸ Other factors, such as interest rate changes, inflation rate changes, unemployment rate changes, and other stocks' price changes also cause the HFT market maker to update its quoted price.¹⁹ When the HFT market maker updates its quotes, it cancels its previous quotes.²⁰ As a result, HFT market makers cancel most of their quotes, because they are constantly updating them.²¹ Since market makers typically send their quotes to a number of the eleven U.S. stock exchanges and several other trading venues, market makers cancel orders in all venues every time they update their quotes, which occurs at least every time they execute a trade.²² Many claim that this creates phantom liquidity, which occurs when seemingly available quotes suddenly disappear, and thus the market

submitted. Such an allocation rule rewards fast movers who provide liquidity at a given price and generates an arms race for speed.”).

¹⁵ Frank Pasquale, *Law's Acceleration of Finance: Redefining The Problem of High-Frequency Trading*, 36 CARDOZO L. REV 2085, 2087 (2015) (“[Legal scholars] should be examining how regulation itself incentivized the development of millisecond-level trading technology, and could in the future reduce (or even eliminate) its appeal.”).

¹⁶ Matt Levine, *Why Do High-Frequency Traders Cancel So Many Orders?*, BLOOMBERG VIEW (Oct. 8, 2015, 6:06 PM), <http://www.bloombergview.com/articles/2015-10-08/why-do-high-frequency-traders-cancel-so-many-orders-> [<https://perma.cc/3Q5Q-96WC>].

¹⁷ *Id.*

¹⁸ *Id.* (“[M]oving the quote up by a penny each time someone buys, and down by a penny each time someone sells.”).

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* (“So this simplest stylized market making strategy cancels 50 percent of its orders without ever executing them . . . It now has a cancellation rate of 95.5 percent.”).

²² *Id.*

is thinner than it seems to be.²³ The constant quote cancellations have also created the perception that HFTs' trading strategy is front running and harmful to the market.²⁴

Front running traditionally refers to a broker's practice of trading for its own account before it trades for its clients' accounts based on information that is not yet available to its clients.²⁵ Front running is unethical because the broker benefits at the expense of its clients.²⁶ Thus, the Financial Industry Regulatory Authority (FINRA) and the SEC have forbidden front running.²⁷ Electronic front running refers to the practice described above, where an HFT firm alters its quotes on all exchanges based on a transaction that has occurred in one exchange.²⁸ Because HFT firms are faster than other market participants, HFT firms are able to take advantage of their speed to make a profit.²⁹ The HFT practice of electronic front running is different from traditional front running because the HFT is not

²³ GARY SHORTER & RENA S. MILLER, CONG. RESEARCH SERV., R43608, HIGH FREQUENCY TRADING: BACKGROUND, CONCERNS, AND REGULATORY DEVELOPMENTS 19 (2014) ("A separate criticism of HFT is that the liquidity provided is often fleeting and has been alternatively dubbed 'phantom liquidity' or 'flickering quotes.' Several factors are said to underlie this, including the speed differences between trading venues, and rapidly changing order book dynamics due to HFTs' penchant for posting and then cancelling orders. As a consequence, the available liquidity for given securities may often be less than what may appear to be the case. Some institutional investors are said to have difficulties evaluating whether or not posted liquidity is transient.").

²⁴ Levine, *supra* note 16.

²⁵ *Front Running*, INVESTOPEDIA, <http://www.investopedia.com/terms/f/frontrunning.asp> [<https://perma.cc/8Y38-EGVE>] ("The unethical practice of a broker trading an equity based on information from the analyst department before his or her clients have been given information.").

²⁶ *Id.*

²⁷ *E.g., Rule 5270 - Front Running of Block Transactions*, FIN. INDUS. REG. AUTH. (2013), http://finra.complinet.com/en/display/display_main.html?rbid=2403&element_id=10860 [<https://perma.cc/45DK-STBE>].

²⁸ Fox, Glosten & Rauterberg, *supra* note 2, at 226 ("'[E]lectronic front running' involves a situation in which an HFT, before others in the market, learns of a transaction that has occurred at one exchange and alters its quotes on other exchanges given the possibility that similar orders may still be in transit heading toward other exchanges. The HFT races ahead of these orders still on their way to the other exchanges and, before they arrive at their destinations, changes its quotes on these other exchanges.").

²⁹ *Id.* at 227.

handling its customer's order, and therefore is not breaching a duty to its customer.³⁰

HFT firms purchase special privileges from exchanges in order to have time priority.³¹ HFT firms enter into co-location agreements with exchanges, which allow HFT firms to place their computers in the same location as the exchange's server and receive market data milliseconds faster than other market participants.³² In a market that competes on time, a millisecond makes a difference.³³ Some HFT firms use their time priority to take advantage of information they possess on less sophisticated investors' trading intentions because they are able to trade ahead of those less sophisticated investors.³⁴ Exchanges no longer have a transparent fee structure as a result of modifications favoring HFT firms.³⁵ Therefore, some have lost trust in exchanges and argue the market is rigged.³⁶

The economics and finance academic community regard HFT as beneficial to the market because HFT provides liquidity and therefore facilitates the flow of commerce in the capital markets.³⁷

³⁰ *Id.* (“It should be noted at the outset, however, that the HFT practice labeled as ‘electronic front running’ is distinctly different from the kind of behavior that has traditionally been termed ‘front running.’ Traditional front running, which is clearly illegal, relates to a situation involving a customer giving her broker an order to handle. Then the broker, which has a legal duty to its customer not to use knowledge of its customer's order to its own advantage, breaches this duty by engaging in a trade on its own behalf that executes ahead of the customer's order.”).

³¹ Mike Bontrager & Luke Zubrod, *IEX Revolution Will Restore Trust in Wall Street*, CNBC (Dec. 23, 2015) <http://www.cnbc.com/2015/12/23/iex-revolution-will-restore-trust-in-wall-street-commentary.html> [https://perma.cc/B4EP-MVAK].

³² Foley, Thompson & Dunne, *supra* note 5.

³³ *High-Frequency Trading – HFT*, *supra* note 1.

³⁴ Bontrager & Zubrod, *supra* note 31 (“For example, by combining superior trading with information on the trading intentions of less sophisticated investors like pension funds, some HFT firms profit by trading ahead of these investors.”).

³⁵ *Id.* (explaining that “stock exchanges now largely make their fees catering to [HFT firms] and that the public distrusts the markets due to the belief that the market is rigged – “the perception of a heads-I-win-tails-you-lose finance.”).

³⁶ *Id.*

³⁷ Jonathan Brogaard et al., *High-Frequency Trading and the Execution Costs of Institutional Investors*, 345 FIN. REV. 345, 346 (“While the rise of

Some have stated there is a need to understand how HFT firms affect other players in the market, but there is no need for additional regulation of HFT yet.³⁸ The recent phenomenon of flash crashes³⁹ has further provided proof that liquidity is crucial for the proper functioning of the market.⁴⁰ However, there are concerns that HFT firms do not provide dependable liquidity because the size of their quotes is not large enough to provide liquidity in times of crisis, as compared to the liquidity that traditional market makers provide.⁴¹

machines has raised concern, most academic evidence suggests it has improved measures of market quality such as volatility, price discovery, and liquidity . . . after the HFT firm enters, spreads decrease by 50%. . . . provide more liquidity when spreads are wide.”). In addition to providing liquidity, studies have shown that HFT contributes to price discovery and helps market volatility. *Id.*; Shorter & Miller, *supra* note 23, at summary (“HFT supporters argue that the increased trading provided by HFT adds market liquidity and reduces market volatility. They argue that HFT is a technological innovation that is the latest evolutionary stage in a long history of securities market making. They assert that HFT has reduced the bid-ask spreads in stock trading, thereby lowering trading costs.”).

³⁸ Brogaard, *supra* note 37, at 368 (explaining that because of their inability to find a relationship between HFT and execution costs, and in light of the previous findings of HFT’s benefits to the market, there is no need for strong regulation of HFT and only further examination regarding HFT’s effect on other market players is warranted).

³⁹ The Flash Crash was a very fast fall and recovery in the price of securities that occurred in May 6, 2010. The Dow Jones Industrial Average fell by 1000 points (9%) in a few minutes. There have been subsequent extreme market movements, called mini-flash crashes. Shorter & Miller, *supra* note 23, at 29 (“[P]recipitous decline of nearly 700 points in a few minutes . . . twenty minutes later the market rebounded, regaining most of the 700 point drop on the DJIA Such concerns intensified after the Flash Crash of 2010 and have continued with observations of ongoing mini-flash crashes.”).

⁴⁰ Shorter & Miller, *supra* note 23, at 22, 37 (explaining that liquidity reflects the ease with which an investor can buy or sell a security without impacting its price, and that some have suggested imposing affirmative trade obligations on HFT firms that are not registered broker-dealers such that they have to provide liquidity to the market in times of market disruptions similar to the Flash Crash).

⁴¹ *Id.* at 18-19 (“Some observers are concerned that overall market liquidity could deteriorate if HFT firms were to quickly and unexpectedly incur large losses. An attendant worry is that the liquidity that is provided by high-frequency trades is often not qualitatively comparable to the liquidity provided by traditional market makers. The high-frequency trades are said

Part of the issue is that “HFT is not a monolithic phenomenon, but rather encompasses a diverse range of trading strategies,” meaning that HFT firms do not only engage in market making strategies that provide liquidity.⁴² The diversity in HFT trading strategies potentially undermines the alleged benefit of providing liquidity.

The Flash Crash of 2010 was the first event that prompted investigation into HFT’s effect on the market.⁴³ Since then, academics and regulators have been scrutinizing HFT, not least because many controversial practices in today’s markets involve HFT.⁴⁴ HFT’s controversial practices include electronic front running, slow-market arbitrage, exploitation of midpoint orders sitting in dark pools, and activities leading to increased volatility and flash crashes.⁴⁵ HFT has also received some bad publicity stemming from fraudulent activities.⁴⁶ For example, the SEC has settled several matters with HFT firms related to spoofing⁴⁷ and other types of market manipulation.⁴⁸ Although there are different types of HFT firms and practices that affect the market in different ways, the lack of uncertainty surrounding HFT has led critics to conflate different

to generally lack depth because of the relatively small size of HFT quotes (offers to buy or sell certain securities) and the fact that HFT firms have no affirmative market-making obligation.”).

⁴² *Id.* at 16.

⁴³ *Id.* at 1; U.S. SEC. & EXCH. COMM’N & U.S. COMMODITY FUTURES TRADING COMM’N, FINDINGS REGARDING MARKET EVENTS OF MARCH 16, 2010 (2010), available at <https://www.sec.gov/news/studies/2010/marketevents-report.pdf> [<https://perma.cc/S48F-5RJN>].

⁴⁴ Fox, Glostén & Rauterberg, *supra* note 2, at 201-03 (enumerating the eight most controversial practices of today’s stock markets, and explaining that the first three involve HFT benefiting from co-location agreements).

⁴⁵ *Id.*

⁴⁶ Gass & Dube, *supra* note 2.

⁴⁷ *Id.* (defining spoofing as “a practice in which a trader artificially manipulates the sale price of the security by placing and immediately cancelling orders to create false impressions of buy or sell interest”).

⁴⁸ *Id.* (“The SEC has been actively scrutinizing HFT and, in 2014, settled several matters . . . accusing defendants of violating Exchange Act Sections 9(a)(2) and 10(b), as well as Rule 10b-5 . . .”).

HFT practices.⁴⁹ This has given rise to a general negative sentiment against HFT due to the fraudulent practices of some HFT firms.⁵⁰

2. Current Regulation and High-Frequency Trading

The SEC passed Rule 611 of Regulation National Market System (Reg NMS)⁵¹ in 2005 with the intention of ensuring that investors obtain the best available price for stocks.⁵² Rule 611 is also known as the “trade-through” or “order-protection” rule, and it prevents exchanges from executing trades at lower prices than those posted in other exchanges.⁵³ However, Rule 611 has led to increased market fragmentation by increasing trading in dark pools and other off-exchange venues.⁵⁴ This fragmentation has increased market

⁴⁹ Shorter & Miller, *supra* note 23, at 16 (explaining that there are “several distinct HFT strategies . . . [that] have markedly different effects on market quality and investors[,]” and that although there are negative HFT practices there are also HFT practices that benefit end-investors).

⁵⁰ *Id.*

⁵¹ Congress passed Reg NMS with the purpose of integrating all exchanges through the requirement that securities must be quoted simultaneously at the same price in all exchanges. Fox, Glosten & Rauterberg, *supra* note 2, at 199-200 (“The initial impetus for this new market structure goes back to Congress’s adoption in 1975 of the National Market System (NMS) amendments to the Securities Exchange Act of 1934 . . . multiple, competing trading venues have the upside of greater efficiency and higher rate of innovation that are likely to arise from competition. They have the possible downside that orders from potential traders are fragmented among multiple venues, which makes it less likely that willing buyers and sellers can easily find each other and transact.”).

⁵² Ed Beeson, *SEC Market Structure Panel Weighs Key Trading Rule’s Future*, LAW360 (May 13, 2015), <http://www.law360.com.ezproxy.bu.edu/articles/644858/sec-market-structure-panel-weighs-key-trading-rule-s-future> [<https://perma.cc/77DX-KS47>] (“[D]ebate over the future of a core trading rule that was intended to protect investors but has been blamed for making markets overly complex instead. Passed in 2005, Rule 611 of Regulation National Market System [sic], also known as the trade-through or order-protection rule, bars exchanges from executing trades at inferior prices compared to what is available on other venues.”).

⁵³ *Id.* (same as above).

⁵⁴ *Id.* So far, it is unclear whether Rule 611 caused more market fragmentation or whether Rule 611 and increased market fragmentation are merely correlated. The studies have shown that “[t]he substantial increase in trading by dark venues means that displayed limit orders interact with a

complexity, which in turn has facilitated the HFT practices.⁵⁵ *Flash Boys* contends that market volatility has increased significantly in recent years, and that Reg NMS and HFT have contributed to this volatility.⁵⁶

The SEC created the Equity Market Advisory Committee (Committee) to address issues related to Reg NMS's effectiveness and the potential problems Reg NMS has produced.⁵⁷ The Committee is charged with evaluating the role the exchanges play in the current market structure, particularly as it relates to routing and execution of trades, and the impact of HFT on market integrity.⁵⁸ Although the Committee has yet to suggest any changes, the creation of the Committee reflects the SEC's focus on improving market structure and addressing the controversies surrounding HFT.

much smaller percentage of volume today than they did prior to Rule 611. This development may suggest that Rule 611 has not achieved the objective of rewarding the display of limit orders by increasing their likelihood of execution." Further, studies have found that "Rule 611 may create an indirect incentive for market participants to trade in dark venues by causing them to be less willing to trade in lit venues." The only conclusion the SEC has drawn is that "the trade-through restrictions in Rule 611 do not appear to be essential elements for the prevalence of high-speed proprietary trading strategies. Rather, there appear to be significant competitive and technological forces at work that enable active proprietary trading firms to succeed across a wide variety of market structures, most of which do not operate with trade-through restrictions." Memorandum from the SEC Division of Trading and Markets to the SEC Market Structure Advisory Comm. (Apr. 30, 2015) <https://www.sec.gov/spotlight/emsac/memo-rule-611-regulation-nms.pdf> [<https://perma.cc/7G8H-5JA5>].

⁵⁵ Beeson, *supra* note 52 ("In the years since Reg. NMS was passed, U.S. equities trading has been diffused onto dozens exchanges and alternative trading platforms, such as dark pools and electronic communications networks, while automated, high-frequency trading now account for a vast portion of market volume.").

⁵⁶ Fox, Glosten & Rauterberg, *supra* note 2, at 245 ("Michael Lewis, in *Flash Boys*, for example, asserts that the intraday price volatility of the stock market was 40 percent greater between 2010 and 2013 than it was between 2004 and 2006, and associates this change with the enactment of Regulation NMS and the rise of HFT.").

⁵⁷ Gass & Dube, *supra* note 2.

⁵⁸ *Id.*

C. The Revolt against High-Frequency Trading

1. Michael Lewis's *Flash Boys*

Published in 2014, *Flash Boys* argues that HFT firms engage in several predatory tactics that benefit intermediaries at the expense of investors.⁵⁹ The book contends that the current complexity of our financial markets is beneficial only to financial intermediaries because complexity, which does not facilitate capital formation, obscures HFT's predatory tactics.⁶⁰ Perhaps most importantly, the book argues that HFT's practice of adjusting price based on orders amounts to front running.⁶¹ The plot turns on HFT market makers changing prices before investors can purchase more shares from the market makers at the previously quoted price, which is the practice described above as electronic front running.⁶² *Flash Boys'* publication put HFT in the spotlight,⁶³ and prompted several investors to take action.

2. Class Action Lawsuits

Multiple class action lawsuits against exchanges have alleged that the exchanges entered into co-location agreements with

⁵⁹ *60 Minutes: Is the U.S. Stock Market Rigged?* (CBS television broadcast Mar. 30, 2014), <http://www.cbsnews.com/news/is-the-us-stock-market-rigged/> [<https://perma.cc/9BBC-QKGM>] (“Stock market’s rigged . . . by a combination of these stock exchanges, the big Wall Street banks, and high frequency traders . . . [the victims are] everybody who has an investment in the stock market.”).

⁶⁰ *Id.* (explaining that HFT activity is so complex that regulators are unable to understand it).

⁶¹ *Id.* (“The insiders are able to move faster than you. They’re able to see your order and play it against other orders in ways that you don’t understand. They’re able to front run your order.”).

⁶² Levine, *supra* note 16 (“[T]he person who buys 100 shares from the market maker at \$10.01 on one of the exchanges might also want to buy 1,000 more shares from the market maker for \$10.01 on all of the other exchanges. And if the market maker is faster than the buyer, the buyer won’t be able to do that: The market maker will change its quotes on the other exchanges before the buyer can get there and trade with those quotes. This is much of the plot of . . . Michael Lewis’s book ‘Flash Boys[.]’”).

⁶³ Gass & Dube, *supra* note 2.

HFT firms, providing timing advantages to the HFT firms.⁶⁴ In return, the exchanges allegedly received fees that were undisclosed to the public.⁶⁵ The plaintiffs allege that the timing advantage for the HFT firms, in addition to providing other special benefits to the HFT firms, harmed other market participants, in violation of the antifraud provisions of the federal securities laws.⁶⁶

Recently, two courts have ruled plaintiffs failed to state a claim in their complaints.⁶⁷ In *In re Barclays Liquidity Cross & High Frequency Trading Litigation*,⁶⁸ the Southern District of New York found that “merely enabling a party to react more quickly to information” is not a manipulative act, and therefore does not violate securities laws.⁶⁹ The Court emphasized that there is no manipulation “where the services . . . are publicly known and available to any customer willing to pay.”⁷⁰ In *Braman v. The CME Group, Inc.*,⁷¹ the Northern District of Illinois dismissed several claims related to HFT against several derivatives exchanges, finding that the exchanges were not responsible for the HFT firm’s trading activity that gave rise to the allegation of market manipulation.⁷²

The *In re Barclays* court made clear that because exchanges are self-regulatory organizations (SROs), exchanges are “absolutely immune” from suits alleging that they gave HFT firms an unfair advantage.⁷³ As SROs, exchanges have the power to design the

⁶⁴ Foley, Thompson & Dunne, *supra* note 5. See also Cara Salvatore, *Investors Consolidate Suits Over High-Frequency Trading*, LAW360 (Sept. 3, 2014), <http://www.law360.com.ezproxy.bu.edu/articles/573408/investors-consolidate-suits-over-high-frequency-trading> [<https://perma.cc/E6284C7D>] (alleging that “in addition to diverting billions of dollars from plaintiffs and the class through electronic front-running, rebate arbitrage, latency arbitrage, spoofing, layering and contemporaneous trading, HFT firms knowingly paid the exchanges and Barclays massive sums of money for access to material non-public data.”).

⁶⁵ Foley, Thompson & Dunne, *supra* note 5.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ 2015 U.S. Dist. LEXIS 113323 (S.D.N.Y. Aug. 26, 2015).

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ 2015 U.S. Dist. LEXIS 161941 (N.D. Ill. Dec. 3, 2015).

⁷² Foley, Thompson & Dunne, *supra* note 5.

⁷³ Ed Beeson, *‘Flash Boys’ Suits Lose Luster After Exchange Case Tossed*, LAW360 (Aug. 27, 2015), <http://www.law360.com.ezproxy.bu.edu/articles/696221/-flash-boys-suits-lose-luster-after-exchange-case-tossed>

services they offer HFT firms.⁷⁴ Courts have suggested the SEC must decide how to fix the issues of market structure, since the SEC “directly regulates the exchanges and has the authority to approve or disapprove their rules and operations.”⁷⁵ Further, the suits allege that the exchanges aided and abetted a manipulative scheme, rather than committing a primary violation of the Exchange Act, a claim for which no liability exists.⁷⁶ Based on the results in *In re Barclays* and *Braman*, courts will likely not hold exchanges liable for entering collocation agreements with HFT firms.⁷⁷ Regardless, the recent increase in litigation highlighting the injustices of HFT is indicative of its growing disfavor in the marketplace.

3. IEX

Frustrated with the current state of the U.S.’s market structure, Brad Katsuyama, the protagonist of *Flash Boys*, created IEX.⁷⁸ IEX began as a broker-dealer that operated an ATS with a transparent fee structure and a publicly published Form ATS.⁷⁹ IEX

[<https://perma.cc/U8ZG-JFG9>] (“Judge Furman said Lewis’ book may well highlight the inequities of modern market structure, but as a legal matter, the plaintiffs in the five suits consolidated before him are barred from bringing such suits against exchange operators because of their status as a self-regulatory organization. Under this status, exchanges are ‘absolutely immune’ from private civil claims . . .”).

⁷⁴ *Id.* (“Concocting such services fall within the quasi-governmental powers delegated to the exchanges.”).

⁷⁵ *Id.*

⁷⁶ *Id.* (“Even if exchange immunity were not an issue . . . claims against venues would still fail because they don’t allege a primary violation of federal securities laws. Instead, by alleging that exchanges helped high-frequency traders rig the markets, they are merely asserting an aiding and abetting claim against them. There is no liability under the Exchange Act for aiding and abetting a manipulative scheme . . .”).

⁷⁷ Foley, Thompson & Dunne, *supra* note 5.

⁷⁸ Owens, *supra* note 9.

⁷⁹ *IEX*, *supra* note 6 (“IEX is a FINRA registered broker-dealer (registered as “IEX Services LLC”) that operates an [ATS] supporting displayed and non-displayed trading . . . We share below our effective Form ATS . . . part of our effort to set new standards for transparency in our industry.”). Trading venues must submit a Form ATS to the SEC to operate legally. A Form ATS describes how the trading venue operates and contains information regarding its participants, traded securities, prices, order types, matching logic, and order book priority. *IEX - Policy*, IEX GROUP, INC.,

is registered with FINRA, and filed to become a registered national securities exchange with the SEC.⁸⁰ The SEC granted IEX's application on June 17, 2016.⁸¹

IEX's goal is to restore trust in the financial markets by providing transparency.⁸² IEX is attempting to level the playing field by eliminating special advantages, such as special order types and trading rebates, thus better aligning the exchange's interests with investor interests.⁸³ IEX's most notable rule is to impose a 350-microsecond delay to prevent the fastest HFT firms from having an advantage over other market players.⁸⁴ This "speed bump" on HFTs would forbid them from taking advantage of latency differences.⁸⁵ The 350-microsecond delay is created with a 38-mile long coil of optical fiber.⁸⁶

Because IEX's rules are controversial, the SEC's notice to receive comments on IEX's application prompted a heated debate over whether the SEC should grant IEX's application.⁸⁷ Nasdaq pointed out the SEC must determine whether the speed bump would meet the Reg NMS requirement of having its quotations be "protected quotes" under the SEC's interpretations of Reg NMS that requires protected quotations to have no preprogrammed delay.⁸⁸

<https://www.iextrading.com/policy/#form-ats> [<https://perma.cc/HU8W-E6PY>].

⁸⁰ *IEX*, *supra* note 6 ("IEX has filed with the SEC to become a registered national securities exchange on August 21, 2015. Pending SEC approval, IEX will cease operation of the ATS by IEX Services LLC and commence operation of the Exchange by Investors Exchange LLC.").

⁸¹ Investors Exchange Notice of Designation of Longer Period, *supra* note 8; Press Release, Sec. & Exch. Comm'n, *supra* note 8.

⁸² Bontrager & Zubrod, *supra* note 31.

⁸³ *Id.*

⁸⁴ Ed Beeson, *Michael Lewis Rips Lobbying Against 'Flash Boys' Exchange*, LAW360 (Dec. 14, 2015) <http://www.law360.com.ezproxy.bu.edu/capitalmarkets/articles/737746/michael-lewis-rips-lobbying-against-flash-boys-exchange> [<https://perma.cc/RVS5-UR35>].

⁸⁵ *Id.*

⁸⁶ Owens, *supra* note 9.

⁸⁷ *Id.* ("Right now, we have 330-something [comments], so it's gotten kind of crazy. We have more comments than every exchange in the history of the United States combined. Nasdaq was the second largest with 97.").

⁸⁸ Beeson, *supra* note 84; Letter from Nasdaq to the Sec. & Exch. Comm'n (Jan. 29, 2016), *available at* <https://www.sec.gov/comments/10-222/10222-350.pdf> [<https://perma.cc/K9X9-442W>].

Nasdaq tried to introduce a quotation delay in 2012 but desisted after the SEC challenged the delay.⁸⁹ The New York Stock Exchange (NYSE) argued that the speed bump would result in investors receiving “stale and misleading quote information,” which would result in an information asymmetry that would favor “dark, pegged orders.”⁹⁰

IEX responded to several market participants’ comments, emphasizing that the speed bump “is a simple, fair, and transparent means of providing access to the exchange that is narrowly tailored to protect investors from systemic inefficiencies In contrast to other exchanges, IEX’s model is offered as an alternative to their conflicted practices of selling access and technology.”⁹¹ Further, IEX pointed out that other exchanges have speed bumps, and therefore the argument that imposing a speed bump is prohibited under Reg NMS fails.⁹² If other national exchanges coil cable within their data centers to equalize latency among their paying co-located members, then IEX’s introduction of a speed bump is not problematic.⁹³ In designating a longer period to determine whether to approve or deny IEX’s application, the SEC emphasized that IEX’s proposal potentially conflicts with the Securities Exchange Act because it may unfairly discriminate against other market players and may place “an inappropriate burden on competition.”⁹⁴ However, the SEC seemed to indicate that IEX’s proposed speed bump would not slow orders

⁸⁹ Beeson, *supra* note 84.

⁹⁰ *Id.*

⁹¹ Letter from IEX to the Sec. & Exch. Comm’n (Nov. 13, 2015), *available at* <https://www.sec.gov/comments/10-222/10222-20.pdf> [<https://perma.cc/SZC7-QXGB>].

⁹² Letter from IEX to the Sec. & Exch. Comm’n (Feb. 9, 2016), *available at* <https://www.sec.gov/comments/10-222/10222-380.pdf> [<https://perma.cc/JRZ8-UFGL>] (“The New York Stock Exchange (“NYSE”), Nasdaq, and BATS all coil cable within their data centers (termed a ‘delay coil’ by the Nasdaq CEO) to equalize latency among their paying co-located members. In fact, the BATS exchange uses a ‘delay coil’ to equalize the distance among members who are co-located in two different data centers.”).

⁹³ *Id.* (“These delay coils were not subject to a rule filing or comment period, and the Commission has permitted these arrangements for years, with no question as to whether they are inconsistent with Reg NMS.”).

⁹⁴ Investors Exchange Notice of Designation of Longer Period, *supra* note 8.

down more than other exchanges.⁹⁵ In June 2016, the SEC approved IEX's application to become an exchange and allowed the controversial "speed bump" so long as the "speed bump" is less than one millisecond.⁹⁶

D. Conclusion

Because of the variety and nature of HFT practices, market participants need to understand the effect these practices are having on market structure and on other market players before making sweeping statements about HFT's effects. However, the capital markets are intended to benefit end users, not intermediaries. Recent concerns about HFT's harms to end users have prompted a much-needed SEC review to hopefully address these concerns. The Committee is evaluating the effects of all existing rules and regulations when determining what the future of the market's structure should look like.⁹⁷ The SEC's designation of a longer decision period and request for comments regarding IEX's application demonstrates the SEC carefully weighed these issues as it pertained to IEX. Further, the SEC's approval of IEX as an exchange demonstrates the SEC is focusing on benefiting end users.⁹⁸

⁹⁵ Matt Levine, *Research Conflicts and Speed Bumps*, BLOOMBERG VIEW (Mar. 21, 2016, 8:42 AM), <http://www.bloombergvew.com/articles/2016-03-21/research-conflicts-and-speed-bumps> [https://perma.cc/PZU2-HVHJ] ("[T]he delay came with a long interpretive letter that basically makes it sound like the SEC is on board with IEX's plans. The main controversy in IEX's application has been about the 350-microsecond 'speed bump' that delays order information going to and from IEX. The speed bump seems not to fit with previous SEC guidance requiring exchanges to execute orders immediately, but IEX has argued . . . that its speed bump doesn't slow down orders any more than many other exchanges do. The SEC seems to agree."); Press Release, Sec. & Exch. Comm'n, *supra* note 8 (allowing a "speed bump" so long as it is "de minimis," and defining "de minimis" as less than one millisecond).

⁹⁶ Press Release, Sec. & Exch. Comm'n, *supra* note 8.

⁹⁷ Beeson, *supra* note 52 ("Gallagher, meanwhile, asked the committee to not approach its review of existing regulation in a piecemeal fashion, but to be bold in its recommendations. 'I urge you to not take anything for granted in your review . . . everything, including statutes, regulations interpretations, must be on the table. There cannot be any sacred cows.'").

⁹⁸ Press Release, Sec. & Exch. Comm'n, *supra* note 8.

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