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The U.S. stock market is undergoing extraordinary upheaval. The approval of the application of the Investors Exchange (IEX) to become the nation's newest stock exchange, including its famous "speed bump," was one of the SEC's most controversial decisions in decades. Other exchanges have proposed a raft of new innovations in its wake. This evolving equity market is a critical piece of national infrastructure, but the regulatory scheme for its institutions is increasingly frayed. In particular, current regulation draws sharp distinctions among different kinds of markets for trading stocks, treating stock exchanges as self-regulatory organizations immune from private civil litigation, while regulating all other trading venues as ordinary broker-dealers. This paper argues that three developments have weakened the case for this regulatory regime. First, in a variety of ways, off-exchange venues have become more like exchanges. Transaction volume on non-exchange venues has increased sharply, and many of these venues are now structurally similar to exchanges in many respects. Second, stock exchanges increasingly offer services designed to mimic sophisticated trading strategies—functionalities once reserved for broker-dealers acting on behalf of their institutional customers. Third, exchanges, which may have once seemed like neutral umpires—providing a rules-based forum to facilitate trade—have begun to tailor their market structure to favor some types of traders at the expense of others. Following the IEX approval, other exchanges have proposed their own uniquely designed speed bumps—sometimes with opposite intentions to IEX—as well as other new market structures. In a variety of ways then, the differences among the trading venues have eroded. Yet, the regulatory status of these venues remains widely distinct. The result is a set of sharp regulatory distinctions that no longer track as sharp functional differences. We discuss these trends and analyze the criteria by which the SEC has been regulating them. The SEC has approved many of these developments, and will have to pass judgment on far more to come. Its decisions, however, are not the product of any comprehensive vision of what our stock market should look like. This is not surprising because so far no such vision has been converged upon by any of the likely sources: the SEC, industry participants, or academic commentators. We sketch some broad possibilities for alternative market structures as the SEC looks towards the stock market's future.

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The future is already here. It's just not evenly distributed.
—William Gibson[1]

If you shift everyone else 350 microseconds into the past, then it's like you perpetually live in the future.
—Matt Levine[2]

1. *Talk of the Nation: The Science in Science Fiction* (NPR radio broadcast Nov. 30, 1999).

2. Matt Levine, *Speed Bumps Are the Hot New Thing for Exchanges*, BLOOMBERG (Aug. 31, 2016, 4:05 PM), https://www.bloomberg.com/view/articles/2016-08-31/speed-bumps-are-the-hot-new-thing-for-exchanges.

I. INTRODUCTION

The U.S. stock market is undergoing extraordinary upheaval. Over the last few decades, technology and regulatory change have profoundly altered how equities are traded, moving the market from a manual, human-driven system where trading volume for a given stock was largely concentrated in a single venue to today's "open architecture" system in which trading is automatized and electronic, and transactions in a company's stock potentially occur across a huge number of trading venues of differing types.[3] The approval of IEX's application to become the nation's newest stock exchange, including its famous "speed bump," was one of the SEC's most controversial decisions in decades.[4] Other exchanges have proposed a raft of new innovations in its wake.[5] Yet while the market has changed dramatically, the regulatory regime has remained largely the same. This Symposium paper focuses on a major piece of that system that seems especially creaky—the regulation of trading venues—and the sharp regulatory distinctions current law draws among different kinds of marketplaces. Specifically, the central argument of this paper is that a series of functional trends have weakened the case for our current venue categorization system and strengthened the case for moving toward a single regulatory status for trading venues. It then considers possible reforms of market structure.

Current law creates two distinct regulatory statuses for equity trading venues. First, there are *stock exchanges*, which the law regulates as self-regulatory organizations (SROs), whose rules are subject to SEC scrutiny and approval, and enjoy absolute immunity from private suit when pursuing their regulatory functions.[6] All other venues are regulated as *broker-dealers*, and can be broken down further as either alternative trading systems (ATSs) (which meet the statutory definition of an exchange but enjoy an exemption), or non-ATS non-exchange venues. The law freights the distinction between *exchange* and *broker-dealer* with considerable regulatory baggage for historical reasons, distinguishing pointedly between exchanges as SROs and all other venues as ordinary broker-dealers. The emphasis here will be on the way in which a variety of trends—some newer than others—undermine the case for these sharp legal distinctions among venues.

In this Introduction, we will very briefly sketch these trends and why they erode the current regulatory scheme's logic. First, ATSs have taken on increasing importance. They perform many of the same social functions as exchanges have traditionally performed and many have a trading structure that in many regards functions just like an exchange.[7] Moreover, transaction volume on ATSs has been increasing significantly. Second, stock exchanges increasingly offer services designed to mimic sophisticated trading strategies—a role once reserved for traditional brokers executing orders for their institutional clients.[8] In essence, many broker-dealers are looking more like exchanges, and many exchanges are providing services previously provided only by broker-dealers.

Third, exchanges have begun to adopt structures that in ways deliberately discriminate

3. Letter from James J. Angel, Assoc. Professor of Fin., Georgetown Univ., to the SEC (Jan. 14, 2011), http://www.sec.gov/comments/sr-bx-2010-059/bx2010059-5.pdf.

4. Press Release, SEC, SEC Approves IEX Proposal to Launch National Exchange, Issues Interpretation on Automated Securities Prices (June 17, 2016), https://www.sec.gov/news/pressrelease/2016-123.html.

5. *See infra* Part IV (describing some proposed fixes to exchange structures).

6. *See infra* note 10 and accompanying text.

7. *Id*.

8. *See infra* Part IV (describing some proposed fixes to exchange structures).

against some market participants in favor of others. These interventions will eventually force regulators to ask exactly what a stock exchange should be. While they may once (if ever) have seemed like neutral umpires—simply providing infrastructure to facilitate trade—some exchanges have moved beyond that role and seem intent on further departing from it.[9] Following the SEC's approval of IEX with its famous speed bump, other exchanges have proposed their own speed bumps—sometimes with opposite ambitions—as well as other new market structures. Through these decisions, exchanges are lining up to take sides in some of today's most heated market structure arguments.

All of these changes collapse the case for the sharp differences in terms of legal obligations and immunities that currently depend on whether an entity is identified as an exchange or as a broker dealer. These regulatory differences no longer track robust functional differences between many members of each group.[10] As the SEC has navigated within this fraying framework to fashion regulatory responses to proposed changes in market structure, it has encountered vigorous controversy among market participants.[11] Moreover, its decisions are not the product of any coherent vision of what our stock market ideally should look like. Nor have either industry participants or academic commentators converged on such a vision. We identify these breakpoints and analyze the criteria by which the SEC has been regulating them. In the context of these changes, calls for a wholesale reconsideration of equity market structure and the regulatory structure of exchanges and broker-dealers seem well-justified.

Such a vision is in urgent need.[12] In particular, by approving the IEX application, the

9. *See infra* Part II (surveying the stock market of the past, some of the forces that propelled it forward, and the regulatory landscape of today's equity marketplace).

10. In a sense, this problem is principally historical: stock exchanges developed as marketplaces for trading stocks, and due to their economic and social prominence, Congress and the SEC created a self-regulatory role for the exchanges. Over the last half-century, a set of new marketplaces for trading stocks have emerged, which are increasingly functionally indistinguishable from exchanges. The answer to "what is a stock exchange?" versus "what is a broker-dealer?" thus turns principally on regulatory distinctions that are an artifact of an earlier time. The set of burdens and benefits that comes with SRO status, which requires little business difference, creates a myriad of problems for equity market structure. *See* Part III (discussing exchanges by broker-dealers and brokerage by exchange).

11. Letter from Theodore R. Lazo, Managing Dir. and Assoc. Gen. Counsel, SIFMA, to Elizabeth M. Murphy, Sec'y, SEC 2 (Oct. 5, 2012) (arguing that NASDAQ's proposed benchmark order "raises issues about the roles and obligations of exchanges and broker-dealers in today's equity market structure."); *id*. at 3 ("it would be an incongruous result if Nasdaq were permitted to use the doctrine of regulatory immunity as a shield against liability, while competing algorithm providers offering the same services may assume unlimited liability for systems issues unless the provider and its customer agree otherwise by arms-length agreement."); Letter from Theodore R. Lazo, Managing Dir. and Assoc. Gen. Counsel, SIFMA, to Mary Jo White, Chair, SEC (July 31, 2013) ("[T]echnological advancements have changed the way the securities markets and market participants operate, with securities exchanges and non-exchange venues operated by broker-dealers performing essentially identical functions in certain respects. Nonetheless, the status of exchanges as self-regulatory organizations ("SROs") has not changed, even as the exchanges have become active competitors with the broker- dealer members they are charged with regulating.").

12. We are not the first to observe this. *See, e.g.*, Mary Jo White, Chair, SEC, Enhancing Our Equity Market Structure, Remarks Before the Sandler O'Neill & Partners, L.P. Global Exchange and Brokerage Conference (June 5, 2014), https://www.sec.gov/news/speech/2014-spch060514mjw; Daniel M. Gallagher, Comm'r, SEC, Remarks to the Georgetown University Center for Financial Markets and Policy Conference on Financial Markets Quality (Sept. 16, 2014), https://www.sec.gov/news/speech/2014-spch091614dmg.html; Michael S. Piwowar, Comm'r, SEC, The Benefit of Hindsight and the Promise of Foresight: A Proposal for A Comprehensive Review of Equity Market Structure, Remarks Before the 2013 Global Trading and Market Structure Conference (Dec. 9, 2013), https://www.sec.gov/news/speech/2013-spch12013msp.

SEC unleashed powerful forces of path dependency that will propel it toward permitting further innovation. Without being armed with a more general framework for assessing market structure, policymakers will be forced to make decisions half-blind. Consider just a few of the broader normative questions about equity market structure that are raised by recent developments:

> Should exchanges be allowed to offer functionalities that traditionally defined brokerage provision of execution services?
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> What are the principles for approving changes to stock exchange market structure intended to differentially benefit market participants?
>
> Should stock exchanges retain their status as self-regulatory organizations? If not, what should the future of equity market self-regulation look like?
>
> Ultimately, what should a stock exchange be?[13]

This short piece does not attempt to provide definitive answers to these questions. Rather, it argues that such an inquiry is necessary because the rationale for the current regulatory environment is increasingly losing its cogency. It then looks briefly at the broad possibilities for alternative market structures and suggests principles and reforms for the SEC as it looks toward the stock market's future.

This Article proceeds in three additonal parts. Part II briefly sketches the evolution of the stock market from when the typical stock predominantly traded on a single stock exchange with physical trading floors to today's 12 stock exchanges, 30 or so "alternative trading systems," and over 200 "internalizers" as places where such a stock can trade. Part III identifies forces that have been emerging to disrupt and unsettle the stock market's structure, including the collapsing distinction between broker-dealers and exchanges and the emerging adoption by exchanges of structures and functionalities designed to benefit some traders at others' expense. Part IV turns to the future of the stock market. It looks at how the SEC has reasoned so far about these emerging developments and canvasses alternate visions of the equity market.

II. THE STOCK MARKET TRANSFORMED

This Part briefly surveys the stock market of yesterday, some of the forces that propelled it forward to the market we have today, and the regulatory landscape of today's equity marketplace.

A. Yesterday's Stock Market

In the 1970s, the stock market looked very little like today. There were several stock exchanges, but the trading volume for the stock of most public companies of any real importance was dominated by the New York Stock Exchange (NYSE), which operated as

13. Ian Domowitz, *An Exchange Is a Many-Splendored Thing: The Classification and Regulation of Automated Trading Systems*, *in* THE INDUSTRIAL ORGANIZATION AND REGULATION OF THE SECURITIES INDUSTRY 93 (Andrew W. Lo ed. 1996); *see generally* Ruben Lee, *What Is an Exchange?*, *in* 1 CAPITAL MKTS. FORUM YEARBOOK (1993) (discussing the intricacies of exchanges); Jonathan Macey & Hideki Kanda, *The Stock Exchange as a Firm: The Emergence of Close Substitutes for the New York and Tokyo Stock Exchanges*, 75 CORNELL L. REV. 1007 (1990) (explaining that there is a lesser need for traditional stock exchanges in the modern age); Jonathan Macey & Maureen O'Hara, *Regulating Exchanges and Alternative Trading Systems: A Law and Economics Perspective*, 28 J. LEGAL STUD. 17 (1999) (advocating for alternative trading forums and their regulation and importance).

a non-profit, self-regulatory organization.[14] The only major non-exchange trading venue was NASDAQ. While technically not an exchange, NASDAQ was a market operated by the National Association of Securities Dealers, which itself functioned as a self-regulatory organization. NASDAQ was closely supervised by the SEC (much like an exchange). Thus, the backbone of the equity trading market—marketplaces regulated as SROs—had not evolved significantly since the adoption of the 1933 and 1934 Acts several decades before.

Even while this well-established structure continued, the seeds of change were planted with the entrance of Institutional Networks Corp., later known as Instinet. Instinet was an electronic facility in which institutional investors could trade directly with one another without a broker or specialist.[15] Instinet easily met the statutory definition of an exchange, and the Exchange Act required any such entity to register as an exchange and be regulated as such.[16] If Instinet had registered as an exchange, however, only its members would be allowed to trade on it. Since institutional traders were not allowed to be stock exchange members,[17] such registration would have defeated its whole purpose.

The SEC considered creating a new regulatory category for Instinet and any similar such business.[18] In the meantime, however, Instinet had already applied to register as a broker-dealer and the SEC eventually approved this application. This allowed Instinet to be regulated and supervised by the SEC under this different guise—that of a broker-dealer—and the SEC permitted this originally patchwork solution to become the status quo that still prevails almost a half-century later.[19] Thus, in the 1960s, what would later be called "alternative trading systems" appeared.[20] There was certainly no appreciation at the time of the consequential character of this decision, setting the stock market, as it did, on a path to regulating all equity trading venues that are not exchanges as "broker-dealers."

B. Today's Stock Market Menagerie

A brief survey of the modern stock market's institutions will bring us up to speed. There are now three principal types of trading venues: stock exchanges, alternative trading systems (ATSs), and non-ATS off-exchange trade, which is mostly internalization. The most familiar and still the most important venues for trading stocks are the national stock exchanges,[21] of which there are now 12.[22] In aggregate, around 60–65% of equity market

14. GARY SHORTER & RENA S. MILLER, CONG. RES. SERV., R43739, DARK POOLS IN EQUITY TRADING: POLICY CONCERNS AND RECENT DEVELOPMENTS 1, (Sept. 26, 2014), https://fas.org/sgp/crs/misc/R43739.pdf ("Traditionally, the exclusive locales for stock trades were exchanges such as the New York Stock Exchange[], the American Stock Exchange[], and NASDAQ.").

15. George T. Simon & Kathryn M. Trkla, *The Regulation of Specialists and Implications for the Future*, 61 BUS. LAW. 217, 336 (2005).

16. *See infra* note 21 and accompanying text (defining this term).

17. Simon & Trkla, *supra* note 15, at 336.

18. Automated Trading Information Systems, 34 Fed. Reg. 12,952, 12,953 (Aug. 9, 1969) (to be codified at 17 C.F.R. pt. 240).

19. Eventually, the SEC issued a no-action letter authorizing Instinet to operate pursuant to compliance with regulation. *See* Instinet Corp., SEC No-Action Letter, 1986 SEC No-Act. LEXIS 1 (Sept. 8, 1986).

20. Luis A. Aguilar, Comm'r, SEC, Shedding Light on Dark Pools (Nov. 18, 2015), https://www.sec.gov/news/statement/shedding-light-on-dark-pools.html#_ednref1.

21. 15 U.S.C. § 78c(a)(1) ("The term 'exchange' means any organization . . . [that] provides a market place or facilities for bringing together purchasers and sellers of securities.").

22. *U.S. Equities Market Volume Summary*, BATS GLOBAL MKTS., http://www.bats.com/us/equities/market_share (last visited May 16, 2017).

trading volume typically occurs on the exchanges.[23] As defined by the Exchange Act, an exchange is simply any rule-based marketplace for transacting securities.[24] The Exchange Act § 3 states that any entity seeking to operate as a "national securities exchange" must register with the SEC and operate as a self-regulatory organization (SRO).[25]

Exchanges' status as SROs play an important role in current market structure, so it is worth pausing to discuss what that status involves and the benefits and burdens that it confers. Under the self-regulatory system, exchanges act as quasi-public institutions to which the SEC delegates regulatory functions. As such, the exchanges are charged with partly regulating their own markets, including establishing rules of operation compliant with the Exchange Act and SEC rules, supervising the conduct of their members (i.e., the broker-dealers who are the only persons allowed to trade directly on the exchange), and participating in the governance of the systems that interlink the various exchanges and other equity trading venues.[26] Substantial benefits also accompany SRO status, most importantly dramatic limits on an exchange's potential civil liability to private individuals and institutions. A stock exchange is absolutely immune from liability to private plaintiffs when conducting regulatory activities.[27] Another benefit of SRO status are rule-based liability limits, adopted in the exchange's SEC-approved rulebooks, that impose liability caps on any damages the exchange may need to pay third parties when the exchange is performing both its regulatory and ordinary commercial functions.[28]

The remaining transactions occur "off exchange" on either ATSs or non-ATSs.[29] ATSs can be either electronic communication networks (ECNs) or "dark pools." ECN's

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23. *Id.*

24. *See also* 15 U.S.C. § 78c(a)(1) (2012) (defining an exchange as "any organization, association, or group of persons . . . which constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities"); 17 C.F.R. § 240.3b-16(a)(2) (2005) (defining an exchange as involving "established, non-discretionary methods" for when orders interact).

25. 15 U.S.C. § 78c(a)(26) (2012) (defining self-regulatory organization).

26. *See generally* Concept Release Concerning Self-Regulation, Exchange Act Release No. 34-50700, 84 SEC Docket 619 (Nov. 18, 2004) (discussing "the foundations of the self-regulatory system and new considerations that the Commission and the industry are facing").

27. A "self-regulatory organization 'when acting in its capacity as a SRO, is entitled to immunity from suit when it engages in conduct consistent with the quasi-governmental powers delegated to it pursuant to the Exchange Act and the regulations and rules promulgated thereunder.'" DL Capital Grp., LLC v. Nasdaq Stock Mkt., Inc., 409 F.3d 93, 97 (2d Cir. 2005) (citations omitted) (citing D'Alessio v. N.Y. Stock Exch., 258 F.3d 93, 106 (2d Cir. 2001)); *In Re* NYSE Specialists Sec. Litig., 503 F.3d 89, 96 (2d Cir. 2007); Weissman v. Nat'l Ass'n Sec. Dealers, 500 F.3d 1293, 1296 (11th Cir. 2007) ("SROs are protected by absolute immunity when they perform their statutorily delegated adjudicatory, regulatory, and prosecutorial functions."); Sparta Surgical Corp. v. Nat'l Ass'n Sec. Dealers, Inc., 159 F.3d 1209, 1214 (9th Cir. 1998); Austin Mun. Sec., Inc. v. Nat'l Ass'n Sec. Dealers, 757 F.2d 676, 692 (5th Cir. 1985) ("[T]he NASD . . . requires absolute immunity from civil liability for actions connected with the disciplining of its members.") (citations omitted); *In re* Series 7 Broker Qualification Exam Scoring Litig., 510 F.Supp.2d 35, 42 (D.D.C. 2007). This feature of SROs has also been a fulcrum of scholarly controversy. *See generally*, Rohit A. Nafday, *From Sense to Nonsense and Back Again: SRO Immunity, Doctrinal Bait-and-Switch, and a Call for Coherence*, 77 U. CHI. L. REV. 847 (2010) (arguing that SRO immunity is unwarranted); William A. Birdthistle & M. Todd Henderson, *Becoming A Fifth Branch*, 99 CORNELL L. REV. 1 (2013) (describing SROs as the fifth branch of government).

28. *See* Letter from Theodore Lazo to Mary Jo White, *supra* note 11, at 7–10 (offering an insightful discussion of various market structure issues and specifically discussing exchange liability limits).

29. *See* LAURA TUTTLE, ALTERNATIVE TRADING SYSTEMS: DESCRIPTION OF ATS TRADING IN NATIONAL MARKET SYSTEM STOCKS 5–6, 11 (Oct. 2013), https://www.sec.gov/divisions/riskfin/whitepapers/alternative-trading-systems-10-2013.pdf (providing an overview of ATSs and statistics on trade size distribution across venues).

make their quotations part of the public data feeds. Dark pools can restrict who can have access and do not make their quotes available. The key point here is that an ATS, whether an ECN or a dark pool, does not operate as an SRO.[30] Instead, it is operated by a broker-dealer.[31] Beyond this there is non-ATS trade, which is largely known as "internalization,"[32] whereby a retail broker-dealer sells its customers' order flow to another broker-dealer that acts as the counterparty to the flow of buy and sell orders sent to it.[33]

C. Consequences of the Regulatory Distinction

The distinction between being registered as an exchange and being a non-exchange trading venue registered as a broker-dealer has significant regulatory consequences. Two different classes of consequences are especially important: exchanges' liability limits and exchanges' role in designing and benefiting from the NMS plans that organize much equity market activity. Both create conflicts of interest that the SEC and market participants have noted for some time.[34]

1. The Effects of Exchanges' Liability Limits

Exchanges enjoy absolute immunity from private civil suits when pursuing their SRO functions. They also enjoy low rulebook-based liability limits for other functions. Putting a precise figure on the full value of these liability limits is not possible for the simple reason that it is hard to know all the suits that would have been brought and succeeded had these immunities and liability caps not existed. Nonetheless, there continue to be glaring examples of lawsuits in which exchanges directly benefit from their liability limits.[35] For

30. Regulation of Exchanges and Alternative Trading Systems, 63 Fed. Reg. 70,844 (Dec. 22, 1998) (codified at 17 C.F.R. pts. 202, 240, 242, 249) (Regulation ATS Adopting Release); 17 C.F.R. § 242.300(a) (2009).

31. Why certain *trading venues* would be regulated as broker-dealers was discussed above in Part II.A, but the regulatory status of "broker-dealer" should also be explained. Brokering, as traditionally understood and defined by the SEC, involves "any person engaged in the business of effecting transactions in securities for the account of others," while dealing involves "any person engaged in the business of buying and selling securities . . . for such person's own account through a broker or otherwise." 15 U.S.C. §§ 78c(a)(4)–(5) (2012). In a regulatory term of art, the SEC decided to regulate any person or institution that provides either of these intermediation services as a "broker-dealer" under Form BD (the SEC requires that an individual or institution acting as either a broker or dealer register under the Securities Exchange Act of 1934 (the 1934 Act) as a "broker-dealer" with Form BD, pursuant to § 15(b) of the Act). 15 U.S.C. § 78o(b) (2015). The legal classification "broker-dealer" thus sweeps up in a single regulatory status any individual or institution whose business is intermediating the trade of equities as an agent (a broker), as a principal (a dealer), or as a trading venue (provided it is not a stock exchange). At the level of common sense, broker-dealers are all those financial institutions whose businesses involve executing trades on investors' behalf, making markets in securities by posting limit orders with which other traders can interact, and operating trading venues that are not regulated by the SEC as stock exchanges.

32. *See* Rhodri Preece, *Dark Pools, Internalization, and Equity Market Quality*, CFA INST. 15–19 (Oct. 2012), http://www.cfapubs.org/doi/pdf/10.2469/ccb.v2012.n5.1 (discussing internationalization and its use by broker-dealers).

33. *See also* Concept Release on Equity Market Structure, 75 Fed. Reg. 3594, 3599 (Jan. 21, 2010) (to be codified at 17 C.F.R. pt. 242).

34. *See, e.g.*, *infra* Part IV (discussing the SEC's Concept Release concerning self-regulation).

35. Huntley v. Chicago Bd. of Options Exch., 161 F.Supp.3d 612, 619 (N.D. Ill. 2015); Standard Inv. Chartered, Inc. v. Nat'l Ass'n of Sec. Dealers, Inc., 637 F.Supp.3d 112, 116 (2d Cir. 2011) ("the proxy solicitation, which was the only vehicle available to NASD for amending its bylaws, was plainly 'incident to the exercise of regulatory power,' and therefore an activity to which immunity attached") (citations omitted).

instance, only last year, Nasdaq's SRO immunity shield seemed to play a decisive role in protecting it from liability.[36] The plaintiff's allegations in that case were that Nasdaq had adopted a cap on the fees market makers must pay to trade, which allowed them to trade in huge volume at other traders' expense, allegedly harming traders by hundreds of millions of dollars. While expressing "concern[] that SRO immunity fails to take into account the degree to which the profit-making incentives of exchanges overshadow their regulatory responsibility," the court determined that the relevant function—setting fees—fit squarely within Nasdaq's self-regulatory role, entitling it to lawsuit-ending immunity.[37]

Even some of Nasdaq's actions in connection with Facebook's flawed IPO received protection.[38] During Facebook's IPO, Nasdaq suffered various technological errors that resulted in the opening of trading in Facebook being delayed and some orders failing to be processed for hours.[39] The court granted immunity with respect to a variety, though not all, of Nasdaq's decisions that arguably contributed to the problems with the opening of trade in Facebook shares upon the commencement of its IPO. These included Nasdaq's decision not to halt trading or cancel affected trades as well as certain statements it made in connection with the IPO.[40]

Even more recently, a number of exchanges were sued based on allegations that they catered to HFTs at the expense of other traders.[41] The court found that most of the practices challenged by plaintiffs fell under exchanges' status as SROs, immunizing them from suit. Specifically, the court found that "the Exchanges are absolutely immune for their creation of complex order types . . . [because] the order types permitted by an Exchange define the ways in which traders can interact with that Exchange," and "provision of proprietary data feeds . . . also falls within the scope of the quasi-governmental powers delegated to the Exchanges."[42]

These liability limits are most questionable when exchanges are providing functionalities identical to those of broker-dealers. Here, as many market participants have objected, the exchanges seem to be subsidized by law with their liability limits granting them an anti-competitive advantage when providing an identical service to a broker-dealer.[43]

2. The Effects on Exchanges' Conflicts of Interest

Another major benefit of exchanges' SRO status is their primary role in creating NMS plans—governance schemes for operating aspects of the stock market that are made by select market participants. Although these plans ultimately need to be approved by the SEC, the exchanges take the lead role in the design of the plans. These plans create the

36. Rabin v. NASDAQ OMX PHLX LLX, 182 F.Supp.3d 220, 240 (E.D. Pa. 2016) ("Because SRO immunity shields the Exchange Defendants in this case, Plaintiff's claims against them must be dismissed.").

37. *Id.*

38. *In re* Facebook, Inc., IPO Sec. & Derivative Litig., 986 F.Supp.2d 428, 454 (S.D.N.Y. 2013).

39. John McCrank, *Nasdaq to Settle Facebook IPO Lawsuit for $26.5 Million*, REUTERS (Apr. 23, 2015) http://www.reuters.com/article/us-nasdaq-omx-facebook-litigation-idUSKBN0NE1FD20150423.

40. *In re Facebook*, 986 F.Supp.2d at 454–55.

41. *In re* Barclays Liquidity Cross and High Frequency Trading Litig., 126 F.Supp.3d 342, 357 (S.D.N.Y. 2015).

42. *Id*. at 358. However, the court found that exchanges' provision of co-location services did not fall under the umbrella of their function as SROs. *Id*. at 357.

43. *See, e.g.*, Letter from Theodore Lazo to Mary Jo White, *supra* note 11, at 12.

structure through which much of the operations of the equity market occur and in so doing affect the conduct of every other market participant. The plans, for example, set out the rules governing public dissemination of quotes, a vital design feature, because success in the market often depends on who has access to such information first. This lead role in plan governance generates inherent conflicts of interest that the SEC has recognized for decades.[44] The core conflict is the fact that the exchanges are also economic beneficiaries of the plans they lead for all market participants.

The conflicts of interest resulting from exchanges' dual roles as regulators and profit-making businesses that interact with those they regulate are both many and intractable. For example, the exchanges charge broker-dealers fees to fund the exchanges' self-regulatory activities, but the propriety of those fees is difficult to assess and may simply fund exchange profits.[45] Exchanges also supervise and regulate the conduct of the very broker-dealers with which, as discussed below, they sometimes compete in providing certain services.

The general point of both of these sections is to underline the fact that exchanges (as SROs) and other venues (as broker-dealers) have different regulatory statuses and that this has a number of important consequences.

III. FORCES OF CONVERGENCE AND COMPLEXITY

This Part analyzes three trends that we argue weaken the case for the current regulatory regime for equity trading venues.

A. Exchange by Broker-Dealer

The first trend is the oldest and most familiar: ATSs increasingly resemble traditional exchanges in terms of their structure and they have grown to be a major factor in the market, now accounting for 10–15% of total equity market volume.[46] This similarity in structure dates back to the first ATS, Instinet. ATSs offer some of the same basic services as exchanges do today: an electronic limit order book in which non-marketable limit orders can be posted and against which incoming marketable orders can transact and be reported.[47] Indeed, if anything, it is exchanges whose structures have converged toward the electronic limit order book first pioneered by ATSs rather than ATSs converging toward a structure traditionally displayed by exchanges.[48]

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44. *See, e.g.*, *infra* Part IV (discussing the SEC's Concept Release concerning self-regulation).

45. Letter from Theodore Lazo to Mary Jo White, *supra* note 11, at 12–13.

46. TUTTLE, *supra* note 29, at 2. However, most of this ATS volume today (unlike a decade or so ago) is concentrated in dark pools, where, unlike exchanges, there is no quote reporting, only transaction reporting.

47. A market order is an unconditional order to transact at the best price. A limit order is an order to transact, say buy, at the best price up to a certain limit, but not to purchase above that limit. A marketable limit order has a limit sufficiently high that it will transact at current market prices.

48. For instance, the largest ATSs, like Credit Suisse's Crossfinder and UBS's ATS, operate largely as electronic order books just like stock exchanges. *See, e.g.*, *UBS ATS*, UBS, https://www.ubs.com/microsites/electronic-trading/en/equities/unique-liquidity.html#ats (last visited May 16, 2017) (describing operation of UBS ATS order book); *Crossfinder Form ATS*, CREDIT SUISSE 6–7 ex. F, https://www.credit-suisse.com/media/sites/aes/doc/form-ats-crossfinder-amd.pdf (last visited Mar. 23, 2017) (describing structure of ATS's matching process).

B. Brokerage by Exchange

Exchanges have also become more like broker-dealers in a number of ways,[49] particularly by providing services traditionally offered only by brokerages, a trend that has been largely overlooked.[50] Perhaps the clearest example of this is IEX's discretionary peg ("d-peg") order type. Upon arrival, a d-peg order submitted by a trader is priced (subject to a condition noted below) on IEX as the less aggressive of the order's limit price or the midpoint of the NBBO.[51] To give an example, if it was a d-peg buy order for Johnson & Johnson (JNJ) stock with a limit price of $100.10 (i.e., the order expresses the trader's willingness to buy JNJ stock up to that price), and the NBB and NBO for JNJ were currently $100.08 and $100.09, respectively, then the d-peg would be priced at $100.085. If the NBB and NBO were $100.11 and 110.12, respectively, it would be priced at $110.00. The d-peg is a "dark" order in the sense that if all or part of the order does not execute immediately, it rests on the book of orders at the exchange, but it is not "displayed." The quote would not be included in IEX's public quote information stream.

The IEX d-peg order had an important additional condition, however. If IEX's system determines that the NBBO is "stable," it works as described immediately above. However, if a quote is "unstable" (also known as a "crumbling quote"), then the d-peg buy order will not be permitted to execute at the midpoint. Instability is determined by the IEX system and means that the NBBO quotes are shifting. The point of this is to protect the order from executing at what will likely turn out to be an unfavorable price. For instance, it would be disadvantageous for a buy d-peg order to execute at the midpoint of $100.08 and $100.09 and execute at $100.085, when the quotes are in the very process of moving to $100.07 and $100.08, making the new midpoint $100.075.

The critical point here is that figuring out strategies for getting a customer's purchase or sale order filled at most advantageous average price given the customer's urgency in getting the job done has traditionally been a service provided by the customer's broker. IEX's d-peg order with this protection against crumbling quotes transforms a particular strategy for helping to accomplish this into a new type of order that it will accept and manage. Since IEX's d-peg order was approved by the SEC, exchanges have continued to develop new order types.[52] For instance, NYSE has proposed its own discretionary pegged

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49. The focus here will be on how this phenomenon has evolved in more recent years. It is worth noting, because of its obvious relevance, one salient dimension of exchanges' transition from non-profit member-cooperatives to for-profit business corporations.

50. For an exception, *see* Laura Nyantung Beny, *U. S. Secondary Stock Markets: A Survey of Current Regulatory and Structural Issues and a Reform Proposal to Enhance Competition*, 2002 COLUM. BUS. L. REV. 399 (2002) (noting that exchanges have begun to adopt some broker-like dimensions).

51. The NBBO consists of the national best bid (NBB) and national best offer (NBO), which are the highest bid and lowest offer quotes available for a given security across all public trading venues. In the Matter of the Application of Investors' Exchange LLC for Registration as a National Securities Exchange, SEC Release No. 34-78101 (June 17, 2016).

52. Letter from Elizabeth King, Gen. Counsel and Corp. Sec'y, NYSE., to Brent Fields, Sec'y, SEC (Nov. 12, 2015), https://www.sec.gov/comments/sr-nyse-2015-31/nyse201531-6.pdf (citing Securities Exchange Act Release No. 68629 (Jan. 11, 2013)); Self-Regulatory Organizations and ''Benchmark Orders,'' Exchange Act Release No. 34-68199, File No. SR-NASDAQ-2012-059 (Nov. 9, 2012); CHX Speed Bump Proposal, Exchange Act Release No. 79608, File No. SR-CHX-2016-16 (Dec. 20, 2016); NASDAQ Extended Life Order Proposal, Exchange Act Release No. 79428, File No. SR-NASDAQ-2016-161 (Nov. 30, 2016); NYSE Discretionary Peg Proposal, Exchange Act Release No. 77441, File No. SR-NYSEArca-2016-44 (Mar. 24, 2016). *See* Stanislav Dolgopolov, *High-Frequency Trading, Order Types, and the Evolution of the Securities Market Structure: One*

order.[53]

The SEC's approach to new broker-like functionalities has been understandably piecemeal in light of the lack of anything like a broader framework for approaching these issues on the part of the SEC itself, industry participants, or academics. Nonetheless, it is worth trying to identify the principles on which the SEC reasoning has turned, given that the SEC has approved some new order types, while disapproving others, and there is a raft of new proposals on the horizon.

Consider first the SEC's disapproval of a "Benchmark Order" functionality proposed by NASDAQ in 2012. Benchmark Orders would have enabled parties to submit an initial, "parent order" identifying a specified benchmark involving a particular security that would then be pursued over time. The benchmarks were Volume Weighted Average Price ("VWAP"), Time Weighted Average Price ("TWAP"), or Percent of Volume ("POV"), all of which are common objectives for institutional investors to designate for their brokers. The NASDAQ functionality would then have created a set of "child orders"—specific orders that would have been directed to NASDAQ and other venues with the objective of, say, trading a very large amount of JNJ stock with the aim of being 1%, but no more, of all JNJ trading volume for the next three minutes.

The SEC found that NASDAQ had failed to carry its burden of showing that the proposed Benchmark Order functionality was consistent with Exchange Act § 6(b)(8), which requires that exchange rules do not unnecessarily burden competition. The rationale was the concern that "regulatory immunity, or exchange rules limiting liability, in the context of NASDAQ's proposal to offer a service traditionally provided by broker-dealers, would impose an undue burden on competition."[54] In other words, NASDAQ would be acting like a broker providing trading services beyond traditional exchange market infrastructure, but would be doing so with a significant competitive advantage—the liability benefits of SRO status.

On the other hand, the SEC approved IEX's d-peg order despite protests by market participants that it resembled NASDAQ's disapproved benchmark order.[55] In an effort to distinguish the two, the SEC noted that the automated, rule-based character of the crumbling quote determination made the order type more like traditional pegged exchange orders, whereas NASDAQ's Benchmark Order, unlike IEX's d-peg, had involved a third party contractor that would have directed orders to multiple venues. This is not a very satisfactory distinction because it is entirely unclear why providing the order functionality

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Whistleblower's Consequences for Securities Regulation, 2014 U. ILL. J.L. TECH. & POL'Y, 145, 149 (2014) (discussing the proliferation of new order types).

53. NASDAQ has proposed an extended life order. NASDAQ Extended Life Order Proposal, Release No. 34-79428, SR-NASDAQ-2016-161 (Nov. 30, 2016). The extended life order awards a higher priority for execution to a displayed limit order that commits to remaining in the order book for at least one second, than a limit order at the same price that does not make that commitment. The extended life order awards a higher priority for execution to a displayed limit order that commits to remaining in the order book for at least one second, than a limit order at the same price that does not make that commitment. This order type would create robust incentives for the generation of non-fading liquidity.

54. Self-Regulatory Organizations, Securities Exchange Act Release No. 34-68629, File No. SR-NASDAQ-2012-059) (Jan. 11, 2013), Self-Regulatory Organizations and ''Benchmark Orders,'' Exchange Act Release No. 34-68199, File No. SR-NASDAQ-2012-059 (Nov. 9, 2012). The SEC also disapproved the proposal because of concerns that risk controls under Rule 15c-3 would not apply to the Benchmark Orders. *Id.*

55. Letter from Elizabeth King to Brent Fields, *supra* note 52, at 10; Self-Regulatory Organizations and ''Benchmark Orders,'' Exchange Act Release No. 34-68199, File No. SR-NASDAQ-2012-059 (Nov. 9, 2012).

entirely in-house, rather than using a third party should matter.

C. Structural Interventions

Alongside offering functionalities that mimic traditional brokerage services, IEX also adopted structural features designed to ameliorate what it suggests are certain perceived flaws in market structure. IEX's core innovation was its "speed bump," a 350 microsecond[56] delay imposed on all incoming communications before they entered the IEX trading system, and an equivalent delay imposed on all transaction and quotation data that it sends out to the public. The speed bumps were designed to eliminate various potential forms of latency arbitrage, which involved high-frequency traders rapidly learning of transactions at IEX and then altering their quotations at other venues before a trader could execute transactions there.

In any event, the speed bump proposal caused a problem from a regulatory perspective because of its facial conflict with a requirement of Regulation National Market System (Reg. NMS).[57] A centerpiece of Reg. NMS is the "Order Protection Rule,"[58] which generally bars transactions at prices inferior to the best quotes for a given stock available on the publicly disseminated feed. Under these rules, as an exchange, IEX's best bids and offers are required to receive protection, but protected quotes under NMS are supposed to be available "immediately."[59] The speed bump of IEX briefly, but deliberately delayed the posting of quotes. The SEC ultimately determined that the speed bump was not an obstacle to approval. In connection with approving IEX's application, the SEC promulgated new guidance clarifying that it viewed intentional delays of less than one thousand microseconds to be de minimis and permissible.[60]

This reasoning, while probably correct with regard to protecting the quotes sent to IEX, does not address the significant policy issues raised by the delay in transaction reporting.

During the IEX application process, high-frequency trader Citadel asserted that approval of IEX's application "would make it difficult for the [SEC] to disapprove the many new exchange mechanisms that exchanges would be sure to propose using IEX as precedent."[61] Since IEX's approval, exactly this suspicion has been confirmed. Both the

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56. A microsecond is one millionth of a second.

57. NMS security designation and definitions can be found at 17 C.F.R. §§ 242.600(b)(57)–(58) (2005).

58. Order Protection Rule, 17 C.F.R § 242.611 (2005).

59. Under Reg. NMS, a protected bid or offer must be an "automated quotation," 17 C.F.R. § 242.600(b)(57)(iii), and an "automated quotation" must be a quotation "displayed by a trading center" that permits an execution against it "immediately and automatically." 17 C.F.R. § 242.600(b)(3)(ii). Indeed, the SEC had specifically explained that "[t]he term 'immediate' precludes any coding of automated systems or other type of intentional device that would delay the action taken with respect to a quotation." Exchange Act Release No. 51808, File No. S7-10-04, at 166 (June 9, 2005), https://www.sec.gov/rules/final/34-51808.pdf.

60. *See* Commission Interpretation Regarding Automated Quotations Under Regulation NMS, 81 Fed. Reg. 40,785, 40,792 (June 23, 2016) (to be codified at 17 C.F.R. pt. 241) ("Solely in the context of determining whether a trading center maintains an 'automated quotation' for purposes of Rule 611 of Regulation NMS, the Commission does not interpret the term 'immediate' used in Rule 600(b)(3) by itself to prohibit a trading center from implementing an intentional access delay that is de minimis—i.e., a delay so short as to not frustrate the purposes of Rule 611 by impairing fair and efficient access to an exchange's quotations.").

61. Letter from John C. Nagel, Managing Dir. & Senior Deputy Gen. Counsel, Citadel, to Brent J. Fields, Sec'y, SEC (Nov. 6, 2015), www.sec.gov/comments/10-222/10222-16.pdf.

Chicago Stock Exchange (CHX)[62] and one of the exchanges in the NYSE group have proposed their own speed bumps.[63]

Interestingly, however, CHX's speed bump, while the same 350 microsecond length as IEX's, is designed to have the opposite effect. IEX's speed bump was designed to facilitate a trader's ability to transact across multiple venues by delaying the discovery of the transaction on IEX by liquidity suppliers with quotes in these other venues, who, if they could learn of the transaction faster, might be able to alter these quotes before the traders orders arrived at these other venues. The CHX speed bump, by contrast, is designed to facilitate liquidity providers' ability to cancel its quotes on CHX if it sees activity in the stock on other exchanges. orders in this way. The CHX speed bump only applies to new incoming marketable orders, delaying their ability to immediately execute against limit orders in the CHX matching system for 350 microseconds.[64] All new resting limit orders as well as instructions to cancel limit orders would be processed without delay.[65]

In aggregate, these trends have substantially weakened the case for the sharp distinctions current regulatory policy draws among equity marketplaces. ATSs and exchanges are no longer so different from one another as they converge along the lines of structure, volume, order functionalities, and design principles, and as some exchanges become more overtly partisan among trading strategies and market participants.

IV. STOCK MARKET FUTURISM

A. Visions of the Stock Market's Future

The argument here has been that a series of trends have weakened the case for the current equity market structure in which important regulatory consequences hang on the distinct legal statuses granted exchanges as SROs and all other execution venues as broker-dealers. Re-thinking the regulation of equity venues thus requires rethinking the current structure of equity market self-regulation. In particular, exchanges' roles as SROs generate conflicts of interest in their governance responsibilities and competitive anomalies when they provide brokerage like functions. We end by considering two possibilities.

1. One Self-Regulatory Status

One attractive future for the stock market would involve the eventual elimination of the multiple different regulatory statuses that currently exist: exchanges (SROs), and ATSs and non-ATS OTC venues (non-SRO broker-dealers that are instead regulated by an SRO). Instead, a single status like "Trading System" would be developed and apply a uniform self-regulatory scheme to every institution on which transactions occur, while allowing trading venues to retain the other regulatory features that currently characterize them (for example, levels of transparency and ability to discriminate among traders allowed to trade

62. SEC, Comments on CHX Rulemaking, Notice of Filing of Proposed Rule Change to Adopt the CHX Liquidity Taking Access Delay 2, https://www.sec.gov/comments/sr-chx-2016-16/chx201616.shtml (last visited Mar. 1, 2017).

63. *NYSE to Introduce New Trading Functionality on NYSE American*, NYSE (Jan. 2017), https://www.nyse.com/news/nyse-american-trading-functionality.

64. CHX Speed Bump Proposal, Exchange Act Release No. 34-79608, File No. SR-CHX-2016-16 (Dec. 20, 2016).

65. *Id.*

on the venue).

Creating a uniform regulatory status would mean either eliminating the exchange-specific SRO status or conferring that status on every venue.[66] The former seems considerably more desirable given the costs to both regulators and the regulated of the intensive SRO supervisory system. While this would be a dramatic change to regulatory structure, it is actually already well underway. At present, almost all exchanges outsource most of their regulatory functions to FINRA, which exercises surveillance oversight over more than 90% of equity market volume.[67] Indeed, in its 2005 *Concept Release Concerning Self-Regulation*, the SEC considered the possibility of a "Universal Industry Self-Regulator."[68] Under this model, "one industry self-regulatory organization would be responsible for . . . all members and all markets," and all other entities would lose SRO authority.[69]

There are a number of desirable features of this model. As detailed by the SEC, these include establishing a uniform playing field for markets to compete on, a broad knowledge of market and intermarket activity due to the integration of regulatory functions by the universal SRO, and the elimination of the many conflicts of interest that the current coupling of exchanges and regulatory functions creates.[70]

The case for such a universal industry self-regulator has only been strengthened by the developments discussed above. Exchanges' development of sophisticated, broker-like functionalities sharpen the anti-competitive effects of exchanges enjoying liability limits while providing services that are profoundly similar to broker-dealers and also sharpen the conflicts of interest that exchanges face in regulating their competitors.

The greatest deficiency of a single, universal self-regulatory organization is that it would eliminate the possibility of multiple SROs competing to provide services to exchanges with potential benefits of innovation and efficiency. However, there is already no effective competition to provide exchanges with SRO services, as each exchange provides some services itself, but outsources most self-regulatory activity to one organization—FINRA.

B. Continued Disaggregation and Venue Choice

If exchanges are going to retain distinct self-regulatory benefits (and burdens), then the SEC should engage in rulemaking to the effect that neither exchanges' SRO immunity from private lawsuit, nor their rulebook-based liability caps extend to new services offered by exchanges that mimic those traditionally offered by broker-dealers.[71]

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66. The SEC has also considered—and rejected—the desirability of eliminating self-regulation altogether. Concept Release Concerning Self-Regulation, Exchange Act Release No. 34-50700, 84 SEC Docket 619 (Nov. 18, 2004). The Concept Release also lays out the set of reasons for self-regulation more generally.

67. *Technology*, FINRA, http://www.finra.org/about/technology (last visited Mar. 1, 2017) ("FINRA has surveillance oversight of more than 90 percent of the listed equities market.").

68. Concept Release Concerning Self-Regulation, Exchange Act Release No. 34-50700, 84 SEC Docket 619 (Nov. 18, 2004).

69. *Id.*

70. *Id.*

71. Exchanges have asserted—and may continue to—that SRO immunity should apply to these offerings. *See, e.g.*, Letter from Jeffrey S. Davis, Vice President & Deputy Gen. Counsel, NASDAQ, to the SEC 8 (Dec. 17, 2012). They do not fall under exchanges' regulatory role, however, for the precise reason that they are broker-like functionalities. The Equity Market Structure Advisory Committee (EMSAC) has suggested raising

Such function-specific removal of liability limits may prove to be a patch at best. Because exchanges supervise and regulate broker-dealers in various ways, opportunities to suppress competition through other, more indirect routes will remain available to exchanges. The SEC could also take a generally liberal attitude towards further exemptions or de minimis rulings, permitting experiments in market structure.

In some sense, this is already happening: courts only extend SROs' absolute liability shield to the activities they conduct as regulators. The SEC could ensure that this approach is pursued *symmetrically* with liability limits applied to any surveillance functions conducted by ATSs.

V. CONCLUSION

The bottom line is that the equity market is evolving, and in ways that place profound pressure on the current regulatory vision for its institutions. *Market structure* has more visibly become a combatant in the various battles for advantage and profit between different types of market participants. ATSs, exchanges, and other execution venues continue to innovate in striking ways. Speed bumps create distinct futures for different traders by shaping who has what information about the past. The time has come for a regulatory evolution as well.

exchanges' rule-based liability limits, but the application of any limit to broker-like functions seems to confer an arbitrary competitive advantage on exchanges.