

Discrimination Platforms

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*Off-exchange trading today has become defined by its opacity. Indeed, the framing of this symposium on *What Happens in the Dark: An Exploration of Dark Pools and High Frequency Trading* and its goal of “exam[ing] a portion of the modern market that remains largely outside of the public eye”¹ is much in line with contemporary thinking in policymaking, academic, and industry circles alike. Yet, off-exchange trading through “dark” pools and the like is far more transparent than thought, and exchange trading the opposite. In fact, much trading through off-exchange platforms is even more transparent than that facilitated by exchanges.*

Despite these realities, the supposed contrast between exchange and off-exchange trading along this dimension continues to be highlighted—often along with a claim that it poses core securities-law problems. All the while, a clear-cut distinction between these two general types of trading platforms has gone relatively unnoticed: exchanges must welcome all traders, yet off-exchange platforms can engage in targeting and excluding. This trader-access distinction, I argue, should matter for those who care about the chief ends of modern securities law—and a good amount of the current transparency-distinction focus should therefore be reallocated toward the access one.

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1. *What Happens in the Dark: An Exploration of Dark Pools and High Frequency Trading*, J. CORP. L. (Mar. 31, 2017), <https://jcorplaw.wixsite.com/symposium>.

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I. INTRODUCTION

Since its emergence over the past ten to fifteen years or so, *the new stock market* has generated much controversy.² During that time, fact-based analysis and coverage of market regulation and practices have often been outnumbered by fiction. The experience to date with respect to the distinction between exchange and off-exchange trading transparency serves as a prime example of the disconnect between description and fact. As with so many aspects of stock trading, when it comes to this one, exchanges are put up on a pedestal, and off-exchange platforms demonized. The former are the model for the ideal of the upright marketplace, the latter a symbol of the underworld of unchecked capitalism.³ But in reality, exchanges are far less transparent than thought, and off-exchange platforms the opposite.

This Article debunks much of the transparency distinction, and attempts to shift the regulatory, scholarly, and popular focus toward a clear-cut distinction that has received far less attention. This other distinction relates to trader access. The law allows off-exchange platforms to discriminate among traders, while requiring exchanges to remain open to all. This access distinction, the Article argues, matters for two core concerns of modern securities regulation: investor protection and stock-price accuracy.⁴ I therefore conclude by calling for the access distinction to be removed from the transparency-focused blind spot. In particular, I call for additional study by commentators and policymakers, with a focus on the precise nature of the segmentation of the stock market by investor type that is taking place due to the access rules.

2. For an overview of this market and some of its most controversial practices, see Merritt B. Fox et al., *The New Stock Market: Sense and Nonsense*, 65 DUKE L.J. 191 (2015). *Sense and Nonsense* provided a timely scholarly response to a growing amount of popular and policymaker critiques of market practices and regulations. These critiques rose to a crescendo a year earlier with the publication of Michael Lewis's best-selling book *Flash Boys: A Wall Street Revolt* and his claim that the United States stock market was "rigged."

3. The title and opening quote of Wall Street Journal writer Scott Patterson's book on off-exchange trading platforms provides one prominent example of this theme. The book is entitled *Dark Pools: The Rise of the Machine Traders and the Rigging of the U.S. Stock Market*, and it is prefaced with the following quote from Ferdinand Pecora, the Chief Counsel to the Senate Banking Committee during Post-Great Depression investigations of Wall Street: "Had there been full disclosure of what was being done in furtherance of these schemes, they could not long have survived the fierce light of publicity and criticism. Legal chicanery and pitch darkness were the banker's stoutest allies." SCOTT PATTERSON, *DARK POOLS: THE RISE OF THE MACHINE TRADERS AND THE RIGGING OF THE U.S. STOCK MARKET* xi (2013).

4. These two concerns have long played leading roles in framing scholarly commentary in the securities area. They also sit at the heart of the SEC's mission. See *What We Do*, SEC (modified June 10, 2013), <https://www.sec.gov/Article/whatwedo.html> ("The mission of the U.S. Securities and Exchange Commission is to *protect investors*, maintain fair, orderly, and *efficient markets*, and facilitate capital formation." (emphasis added)).

The new stock market is complex, with trading of most individual public stocks occurring across about a dozen exchanges and well over a hundred off-exchange platforms. AT&T stock is no longer predominantly traded on the floor of the New York Stock Exchange. Instead, it is bought and sold through about a dozen electronic exchanges, 50 or so *alternative trading systems* (ATSs), and an even larger number of *internalizing platforms*.

Regulatory distinctions among these various trading platforms add to the complexity. The most widely noted distinction relates to the transparency of exchanges versus the opaqueness of ATSs and internalizing platforms. The latter two—the off-exchange platforms—are said to compose the “dark” part of the American stock market, the former the light one. But as I show, these labels are overbroad, if not wrong altogether.

All the while, the trader-access distinction has received little attention. Yet, off-exchange platforms have been using their discretion over access to target certain traders and exclude others. Strikingly, internalizing platforms have been able to garner nearly 100% of the orders of individual, retail-level investors seeking to buy and sell stock on demand, while blocking out institutional investors such as investment funds. At the same time, ATSs target index-based institutional investors and often exclude certain high-speed traders. Taken together, the trading attributable to these two types of *discrimination platforms* adds up to compose almost 40% of all trading volume.⁵

Unlike the hyped transparency distinction, the access one clearly matters for the traditional ends of securities law. In particular, it raises an investor-protection concern as well as a price-accuracy one.

With respect to the former, internalizing platforms that target ordinary, individual investors and block out institutional ones essentially execute investor orders at prices that match the best ones contemporaneously quoted on exchanges. However, the exchange environment that generates those quoted prices is very different than the off-exchange one through which those orders are executing. Indeed, the different trading environments at exchanges and off-exchange platforms are traceable to the very targeting and excluding in focus. In short, the diversion of uninformed traders to internalizing platforms results in an exchange trading environment with a higher ratio of informed traders to uninformed ones than it would otherwise have—and that ratio matters for the quality of prices investors receive. For this reason, ordinary investors may be paying too much when buying shares, and receiving too little when selling them.

The price-accuracy concern is closely related. The altered exchange environment that results from a market in which off-exchange platforms can target and exclude while exchanges must accept all comers matters for fundamental-value traders. As the nomenclature suggest, those traders produce (or pay others to produce) information about firms’ fundamental values. They then profit by buying underpriced stocks, and selling overpriced ones. This trading is valuable, as it impounds important information into market prices—prices that, in turn, guide the allocation of scarce resources in capitalist economy. However, as I explain, the exchange trading environment that results from a market in which off-exchange platforms can siphon off certain types of traders makes fundamental-value trading less profitable. In the end, those traders’ incentive to generate information and impound it into market prices is reduced—likely resulting in a broad reduction to price accuracy across the entire market.

5. See *infra* note 12 and accompanying text.

The remainder of this Article tells the fuller story of transparency and access in the new stock market, step by step. In particular, Part II provides background on each of the main types of trading platforms in the market. Part III then examines the extent to which they differ in terms of trading transparency—upending much conventional wisdom on the nature and scope of the transparency distinction. Next, Part IV surveys the underappreciated distinction relating to the extent to which market participants can access the main types of trading platforms. Finally, Part V thinks about the policy implications of this close look at the market and the regulatory framework that governs it. In so doing, it argues that the access distinction presents the considerable investor-protection and price-accuracy issues introduced above. Ultimately, I conclude that much of the focus on the transparency distinction should be reallocated toward an access one.

II. THE MAIN TRADING PLATFORMS TODAY

In the United States today, the overwhelming majority of all stock trading takes place through sophisticated, electronic trading platforms. These platforms generally fall into one of two main types, exchange and off-exchange. In this Part, I provide a quick overview of each.

A. Exchange Trading Platforms

Stock exchanges are familiar entities. For many, so too is the requirement that these entities register with the SEC as “national securities exchanges,”⁶ thereby subjecting them to both increased regulatory burdens and advantages. But despite images of vibrant trading floors of days past, for some time now, exchanges have been little more than electronic trading systems.⁷ More specifically, exchanges operate continuous-auction systems in which some traders (liquidity-providing ones) post bid and ask price quotes to electronic limit order books, and other traders (liquidity-taking ones) transact against them. The price

6. Section 6 of the Securities Exchange Act of 1934 requires all stock exchanges to register with the SEC. 15 U.S.C. § 78f (1934). The term “exchange” is defined to include far more than just registered national securities exchanges. *See* Exchange Act Rule 3b-16(a), 17 C.F.R. § 204.3b-16(a) (1992); SEC, *Regulation of Exchanges and Alternative Trading Systems*, Exchange Release No. 34-40760, 70848 (1998) (defining the term exchange “to include markets that engage in activities functionally equivalent to markets currently registered as national securities exchanges.”) [hereinafter Reg ATS Adopting Release]. Nevertheless, the SEC generally allows those who operate trading platforms that fall within that broad definition to register as alternative trading systems instead of as national securities exchanges. *See infra* Part II.B.1. The distinction between exchanges and many of the other trading systems discussed in this Article is thus often more a matter of legal nuance and operator choice than substance. *Id.*

7. *See* Concept Release on Equity Market Structure, Exchange Act Release No. 34-61358, 17 C.F.R. § 242, 16 (Apr. 21, 2010), <https://www.sec.gov/rules/concept/2010/34-61358.pdf> [hereinafter Market Structure Concept Release] (noting that “exchanges all have adopted highly automated trading systems”). This transition from trading floor to computer server is colorfully summarized in the opening statement of Senator Levin in a 2014 Senate hearing on stock-market practices and regulation: “[m]ost Americans’ image of the U.S. stock market is shaped by a single room: the trading floor of the New York Stock Exchange, where traders await a ceremonial bell to kick off the day’s activity, then trade shares worth millions on scraps of paper. In reality, most shares are traded not on a floor in Manhattan, but in racks of computer servers in New Jersey. Trades happen not at the speed of a human scribbling on paper, but in the milliseconds it takes for an order to travel through fiberoptic cables.” Senator Carl Levin, *Opening Statement Before Permanent Subcommittee on Investigations on Conflicts of Interest, Investor Loss of Confidence, and High Speed Trading in U.S. Stock Markets* 1 (June 17, 2014) [hereinafter Senate Hearing].

quotes are entered in the form of non-marketable limit orders. Those firm quotes sit in the electronic trading system until they are executed against or removed. The predecessor to these systems was a hand-written book in which the orders sat—thus the current term *electronic limit order book*.

Importantly, bid quotes posted to exchanges constitute legally binding offers against which any trader can sell stock, and ask ones are similarly firm offers opposite which any trader can buy stock.⁸ For this reason, exchange transactions occur whenever a liquidity-taking trader agrees to the price and quantity terms associated with a liquidity-providing trader's bid or ask quote. For example, if the best (lowest) ask quote posted to an exchange for a stock is \$10.52, then a trader may buy the stock in return for that price on demand. Likewise, if the best (highest) bid quote for the same stock is \$10.48, then a trader may swap shares for that amount immediately with certainty.

Importantly, exchange trading revolves around much more than just these best asks and bids. Liquidity providers will not hold out legally binding offers for an endless quantity of shares at those prices. Instead, they will post only so many shares at those “inside spread”⁹ prices, and then quote successively inferior ones. From the perspective of a liquidity-taking trader, buying a large number of shares through an exchange therefore often means having to pay a series of prices, with some overall average price tag associated with the lot. In the above example, a buyer may pick up, say, 300 shares at the best (lowest) ask price \$10.52, another 250 at the next best price of \$10.53, and so on. Liquidity-taking selling of course involves the mirror image of this situation.

Inherent in these descriptions and examples is that traders often must pay more than a stock's current market value to purchase it through an exchange, and receive less than that value to sell it through the same. From their perspective, the facilitation of trading activity provided by exchanges is far from free, as in addition to whatever intermediation fee the exchange might charge there is thus a cost associated with the bid-ask spread. This “spread cost” must be paid to buy or sell stock on demand.¹⁰

There are now well over a dozen registered national securities exchanges.¹¹ Nevertheless, exchange trading is dominated by platforms operated by just three companies: the Intercontinental Exchange (the parent company of the New York Stock Exchange), the NASDAQ OMX Group, and relative newcomer Bats.¹²

Approximately 63% of all reported trading happens through exchanges, with that

8. These terms from the trading industry are also legal terms of art. See Dissemination of Quotations in NMS Securities, 17 C.F.R. § 242.602(b) (2005) (requiring bid and ask quotes to be firm).

9. The term “inside spread” is traceable to a vertical depiction of bid and ask quotes that sit in a limit-order book, where those quotes are set out with bids below a stock's market value and asks above that value. With this arrangement, the highest bid and lowest ask surrounding the current market value fall in the *inside* of the slew of successively inferior bids and asks that appear, respectively, below and above them.

10. It is worth noting that exchange pricing gets more complicated when maker-taker fees and rebates are thrown into the mix. See, e.g., Larry Harris, *Maker-Taker Pricing Effects on Market Quotations*, USC MARSHALL SCH. OF BUS. (Nov. 14, 2013), <http://bschool.huji.ac.il/upload/hujibusiness/Maker-taker.pdf>. For present purposes, the description in the text should suffice.

11. The SEC maintains a list of these exchanges on its website. See *Fast Answers*, SEC (modified Aug. 30, 2012), <https://www.sec.gov/divisions/marketreg/mrexchanges.shtml>.

12. See *U.S. Equities Market Volume Summary*, BATS GLOBAL MKT., https://www.bats.com/us/equities/market_share/ (providing the daily trading volume across each individual exchange) (last visited Sept. 12, 2017).

trading spread out rather evenly among those owned by the three dominant players.¹³ The remaining 37% or so goes through off-exchange platforms, which I discuss next.¹⁴

B. Off-Exchange Trading Platforms

There are two main types of off-exchange platforms. Most of the first type (the alternative trading system) operate much like exchanges, while the second type (the “internalizing” platform) works in a quite distinct manner.

I. Alternative Trading Systems

Most ATSS host exchange-like continuous auctions in which liquidity providers post bid and ask quotes against which liquidity takers transact.¹⁵ If they sound a lot like exchanges, that is because they are. The SEC defines ATSS as any trading system that “bring[s] together purchasers and sellers of securities or . . . otherwise perform[s] . . . the functions commonly performed by a stock exchange.”¹⁶ Indeed, the SEC generally allows such trading platforms to choose whether or not they would like to be regulated as an exchange or ATS.¹⁷

However, unlike exchanges, most ATSS do not openly display the quotes posted with them.¹⁸ This aspect of ATS trading has resulted in most ATSS being described as “dark” pools. After all, the prices at which traders can buy and sell stock in these pools of liquidity cannot be seen before they enter into a trade. But the label is misleading, as even those “dark” pool prices are easily discovered,¹⁹ and some ATSS do in fact make those prices visible.²⁰

13. *See id.* (grouping recent trading volume by parent-company owner).

14. Trading distributions vary by company. But by 2013, roughly half of all publicly traded stocks had over 40% of their trading volume occurring through off-exchange platforms. *See* Frank Hatheway et al., *An Empirical Analysis of Market Segmentation on U.S. Equities Markets* 4 (Nov. 16, 2014), https://papers.ssm.com/sol3/papers.cfm?abstract_id=2275101.

15. *See, e.g.*, Market Structure Concept Release, *supra* note 7, at 19 (“Most dark pools . . . primarily execute trades with small sizes that are more comparable to the average size of trades [completed through exchanges.]”).

16. *See* Regulation ATS, Rule 300, 17 C.F.R. § 242.300(a)(1); *see also* Reg ATS Adopting Release, *supra* note 6, at 70845 (“[M]arket participants have developed a variety of alternative trading systems that furnish services traditionally provided solely by registered exchanges.”); *id.* at 70847 (“[A]lternative trading systems are used by market participants as functional equivalents of exchanges.”).

17. *See* Exemption from the definition of “Exchange” under Section 3(a)(1) of the Act of 1934, Exchange Act Rule 3a1-1, 17 C.F.R. § 240.3a1-1 (2009) (exempting ATSS from the definition of “exchange” so long as they comply with the rules found in Regulation ATS); *see also* Reg ATS Adopting Release, *supra* note 6, at 70847 (noting that the Commission opted for a regulatory approach that “gives securities markets a choice to register as exchanges, or to register as broker-dealers and comply with regulation ATS.”); *id.* (“The framework the Commission adopts today . . . allow[s] most alternative trading systems to choose to be regulated either as exchanges or as broker-dealers.”). Still, there are limitations to this regulatory generosity, as the SEC can (and has) required ATSS with significant trading volume to register as exchanges. *See* Exchange Act Rule 3a1-1(b); *see also* Reg ATS Adopting Release, *supra* note 6, at 70847 (noting that “the Commission can determine that a dominant alternative trading system should be registered as an exchange.”); *id.* at 70857.

18. *See infra* Part III.B.1.b.

19. *See id.*

20. For example, electronic communications networks (“ECNs”) are ATSS that display bid and ask quotes to investors. *See* Regulation NMS Rule 600(23), 17 C.F.R. § 242.600(23) (2005) (defining ECNs as “any electronic system that widely disseminates [quotes] entered therein by [market makers.]”); Market Structure Concept Release, *supra* note 7, at 18 (noting that ECNs generally “offer trading services . . . that are analogous

ATSS, like exchanges, generally facilitate trading against ask quotes that are equal to or lower than the best (lowest) ones displayed in the market. The same applies with respect to bid quotes: These platforms generally intermediate transactions involving prices that are at least as high as the best (highest) bid price displayed market wide. Thus, ATS transactions will generally occur at prices that are at least equal to those then displayed elsewhere in the market.

This conclusion arises out of a mix of legal and market dynamics. ATSS generally allow liquidity providers to post bid and ask quotes with them at whatever prices the liquidity providers prefer. However, the law (specifically, Regulation NMS Rule 611) prohibits transactions at prices that are inferior to the best ones then displayed in the larger market.²¹ Rule 611 is said to help investors by limiting “trade-throughs” of “protected quotations,” as all transactions at inferior prices are out of play for trading platforms until select superior ones displayed elsewhere are executed against or otherwise removed.²²

Because “dark” pools do not display their quotes, they can never have the best *displayed* quote in the market. Instead, some other trading platform will—meaning that transactions at these platforms at prices inferior to those other ones would violate the law. For example, if the best (lowest) undisplayed ask quote available through an ATS is \$10.53, yet the NYSE has a displayed quote at the superior (lower) price of \$10.52, then the ATS is generally restricted from allowing a trade to execute against the \$10.53 ask quote.

Three important limitations to this general picture of ATSS are important to add. First, legal price floors are of little import when ATSS provide superior prices. By practice, ATSS often do just that,²³ supplying buyers with shares, for example, in return for \$10.51 per share when the best (lowest) ask price displayed in the market is a penny higher, and allowing sellers to receive \$10.49 bid prices when the best (highest) displayed bid is \$10.48.

Second, transactions at inferior prices to those quoted elsewhere in the market can (and do) still occur through ATSS. For one thing, Rule 611 has an exception for specialized order types that affirmatively opt to transact against inferiorly priced quotes.²⁴ For another, ATS transactions can occur at worse prices than those embodied in undisplayed (superior) quotes at other platforms. Interestingly, it is not just other ATSS that often have such superior, undisplayed prices. Exchanges will often have them too.²⁵ Those hidden quotes, like superior ATS ones, are not protected by the trade-through rule because they are not readily discernible to the larger market.²⁶

Third, despite this general mode of operation, some ATSS operate in a very different manner. A few are set up not in the image of exchanges, but in that of block-trading networks.²⁷ This type of off-exchange platform helps large buyers and sellers meet,

to those of registered exchanges.”). In fact, ECNs are at times referred to as “light” pools. However, under 1% of all trading volume occurs through these platforms today. *See* Market Structure Concept Release, *supra* note 7, at 14–15, 18.

21. Order Protection Rule, 17 C.F.R. § 242.611 (2012).

22. *Id.*

23. *See infra* Part III.B.1.

24. *See supra* note 18; 17 C.F.R. § 242.611(b)(5)(6) (2005).

25. *See* Part III.A.2.

26. *See* Regulation NMS Rule 600(57), 17 C.F.R. § 242.600(57)(i) (2005) (defining the terms “protected bid” and “protected offer” for the purposes of Rule 611 to include only those bids and asks “displayed by an automated trading center”).

27. *See, e.g.*, Market Structure Concept Release, *supra* note 7, at 19 (“[S]ome dark pools, such as block

transacting their shares at the midpoint between the best nationwide ask and bid quotes, the volume weighted average transaction price in a given time period, or some other measure of the stock's market value at the time of the trade.²⁸ Market participants' orders that are routed to these trading platforms therefore pay no bid-ask spread cost whatsoever.²⁹ While this sub-type of ATS no doubt plays a significant role for many large traders today, much has changed since it first came on the scene. Block-crossing ATSs now appear to be dwarfed in prominence by the more typical exchange-like ones.³⁰ In fact, only a handful of the former appear to be in existence.

Whatever their precise model, prominent ATSs are operated by large, well-known financial companies.³¹ For example, UBS, Credit Suisse, Goldman Sachs, J.P. Morgan, and Deutsche Bank all have ATSs.³² But a slew of lesser-known firms also supply these types of trading systems to the market.³³ All in all, there are about fifty ATSs.³⁴ In the aggregate, they host about 18% of all trading volume,³⁵ meaning that they represent a little less than half of all *off-exchange* trading.³⁶

2. Internalizing Trading Platforms

The second main type of off-exchange platform operates in a manner that is quite distinct from the first. Here, history is the best guide for understanding the present reality.

Traditionally, a practice known as "internalization"³⁷ occurred when a broker (say, Charles Schwab) received client orders to buy and sell a given stock. With storefronts throughout the nation and a long line of clients, Schwab no doubt received many such opposing orders in the same general time frame each trading day. The broker could handle these orders in three main ways. First, it could act strictly as a broker and submit them to trading platforms, where client buy orders would transact against the best (lowest) ask prices and client sell orders against the best (highest) bid ones. Second, it could act as a

crossing networks, offer specialized size discovery mechanisms that attempt to bring large buyers and sellers in the same [publicly traded] stock together anonymously and to facilitate a trade between them.").

28. See Reg ATS Adopting Release, *supra* note 6, at 70849, n.37 ("A crossing system is, typically, one that allows participants to enter unpriced orders to buy and sell securities. Orders are crossed at specified times at a price derived from another market.").

29. See generally *infra* Part III.A.2; see, e.g., Maureen O'Hara & Mao Ye, *Is Market Fragmentation Harming Market Quality*, 100 J. FIN. ECON. 459, 465 and 463 tbl. 1. (June 2011).

30. See *supra* notes 14, 15; Regulation of Non-Public Trading Interest, 17 C.F.R. § 242 (Feb. 22, 2010), 8 <https://www.sec.gov/rules/proposed/2009/34-60997.pdf> (noting that the "dark pools that primarily match smaller orders . . . execute more than 90% of dark pool trading volume."). The average number of shares per ATS transaction (about 220 shares) further evidences that smaller presence. See generally *ATS Transparency Data Quarterly Statistics*, FINRA <http://www.finra.org/industry/otc/ats-transparency-data-quarterly-statistics> (last visited May 17, 2017) (showing recent averages for the number of shares included in ATS transactions).

31. See Rhodri Preece, *Dark Pools, Internalization, and Equity Market Quality*, 2012 Codes, Standards and Position Papers 1, 14-15 (Oct. 2012). ("[S]ix of the ten largest dark pools are run by major investment banks").

32. For a current list of pools maintained by the SEC, see *Frequently Requested FOIA Document: Alternative Trading System ("ATS") List*, SEC (APR. 3, 2017), <https://www.sec.gov/foia/docs/atlist.htm>.

33. See *id.*

34. *Id.*

35. See Regulation Systems Compliance and Integrity, Exchange Act Release No. 34-73639, 55 (Feb. 3, 2015).

36. See *supra* note 14 and accompanying text; *infra* notes 45, 46 and accompanying text.

37. For a more in-depth description of this traditional practice, see LARRY HARRIS, *TRADING & EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS* 514, 520-22, 162 (2003).

broker in a different sense, and facilitate transactions between its buying and selling clients, crossing them at something like the price half way between the best bid and ask prices displayed in the market at that time. Third, it could transact against each *internally*, buying shares opposite the selling client at the then-current best bid prices in the market and then turning around to sell them to the buying client at the best ask ones—netting the bid-ask spread along the way.

Brokers had much reason to choose option #3, and that reasoning still holds today.³⁸ However, what has changed is that retail-level brokers have generally outsourced this stock-dealing business to *external* stock dealers. Today, the internalization proceeds along much of the same path as it has long walked, albeit with these third parties purchasing the right to transact against the clients of specific brokers. In the end, with this added layer and its *payment for order flow*, these investors have their orders executed at undisplayed prices that are at least as good as those then displayed in the market. After all, under the order-protection rule, these platforms, like ATs and exchanges, cannot facilitate trades at prices that are inferior to the best ones displayed nationwide.³⁹ But this is not a problem for those who operate these platforms.

Today, as in decades ago, internalizing platforms typically provide better prices than even the best ones openly quoted at the time. However, a deeper look at this price improvement lessens its attractiveness. For one thing, the boon it offers is rumored to be nominal at best—typically coming in at a mere tenth (\$0.001) or hundredth of a penny (\$0.0001) per share transacted. For another, if all internalized trades were instead passed on to exchanges, there is strong reason to believe they would execute at even better prices.⁴⁰

Internalizing platforms need not register as national securities exchanges or ATs.⁴¹ Instead, those who internalize investor orders to buy and sell stock must simply register with the SEC as broker-dealers—as would, in general, any individual or firm *in the business* of facilitating client trades (brokers)⁴² or buying and selling securities for its own account (dealers)⁴³

Finally, it is worth noting that many would say that internalization remains more of a trading *practice* than a mold for a trading *platform*. But the latter characterization is more than fair given this summary of how it works today. Consistent with this view, the SEC has defined the term “trading center” to include any “broker or dealer that executes orders internally by trading as a principal.”⁴⁴ Whatever the nomenclature applied, trading

38. *See infra* Part IV.B.2.

39. *See supra* notes 21, 22 and accompanying text. Common law and industry self-regulatory “best execution” rules also often restrict brokers from routing their client orders to execute at inferior prices to firm ones displayed elsewhere in the market. *See Newton v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 115 F.3d 1127 (3d Cir. 1997); Order Execution Obligations, Final Rules, Exchange Act Release No. 34-37619A (Sept. 6, 1996), 61 FR 48290, 48322 (Sept. 12, 1996); FINRA Rule 5310(a)(1).

40. *See infra* Part V.A.

41. The broker-dealers engaged in internalization might be operating a trading platform that falls under the general definition of “exchange.” *See* Exchange Act Rule 3b-16, 17 CFR 240.3b-16 (2005). However, the same rule that lays out that definition explicitly exempts these trading systems from that designation. *See id.*; *see also* Exchange Act Rule of 1934 3a1-1, 17 C.F.R. § 240.3a1-1(a)(3)(1992); Reg ATS Adopting Release, *supra* note 6, at 70853 (noting the exclusion of “internal broker-dealer order management and execution systems” from the definition of “exchange” under the Exchange Act).

42. Securities Exchange Act of 1934 § 3, 15 U.S.C. § 78c (1934) (defining “broker”).

43. *Id.* Section 4 (defining “dealer”).

44. Regulation NMS Rule 600(78), 17 C.F.R. § 600(78) (2005).

completed in this fashion is significant. Today, about 20% of all trading volume goes through non-ATS broker-dealer platforms,⁴⁵ therefore composing over half of all current reported off-exchange trading.⁴⁶

* * *

Focusing on two main types of platforms through which stock buying and selling takes place today, this Part has laid out key background information about trading in the contemporary stock market. Trading via all exchanges takes place in much the same way as it has for the last century or two, albeit in electronic form. Off-exchange trading is more diverse in style, with most ATSS bearing a strong resemblance to exchanges (albeit with only hidden quotes) and internalizing platforms operating in a quite distinct manner. In Part III, I build on the foundation laid here by examining how these platforms are said to differ in terms of transparency, and the extent to which that conventional wisdom is accurate.

III. TRANSPARENCY

It has long been assumed that information about exchange trading (namely, information about the prices at which traders are willing to transact (quote information) and that about which trades take place (transaction information)) is transparent, while that associated with off-exchange platforms is anything but. The assumption is ubiquitous, from the popular press setting to policymaking and academic ones. The mere use of the adjective dark in describing the predominant type of ATS evidences this thinking. There is some truth to these depictions of each type of platform. But in reality, exchange trading is far less transparent than thought, while off-exchange trading is the opposite.

A. Exchange Trading Platforms

As a general matter, both exchange transaction information and quote information is shared in real time. But there are considerable exceptions with respect to the latter.

1. Transaction Transparency

Information about stock transactions entered into through exchanges is very much made available to the public immediately after they take place.

This trade transparency is rooted in the law. The SEC requires exchanges to collect information about the transactions they facilitate. Specifically, the law compels the trading platforms to collect information as to the quantity of shares executed in each transaction and the price at which they were executed, and to share it with approved information processors.⁴⁷ The processors then must send that data out to the public.⁴⁸

45. See Market Structure Concept Release, *supra* note 7, at 15; *Dark Pools, Internalization, and Equity Market Quality*, CFA INST. 1,3 (Nov. 2012), https://webcache.googleusercontent.com/search?q=cache:ygBWtSqQMoJ:https://www.cfainstitute.org/ethics/Documents/dark_pools_internalization_and_equity_market_quality_final_issue_brief.pdf+&cd=2&hl=en&ct=link&gl=us

46. See *supra* note 13 and accompanying text.

47. See Regulation NMS, Rule 601, Dissemination of Transaction Reports and Last Sale Data with Respect to Transactions in NMS Stocks, 17 C.F.R. § 242.601 (2005).

48. See Regulation NMS, Rule 603(b), Consolidation Information, 17 C.F.R. § 603(b) (2005).

Still, market forces do much work in this area as well. All major exchanges sell proprietary feeds of this valuable information, allowing those who value access to transaction data the ability to get it directly from its source. Because the public feed set up under government direction has long trailed these private ones, demand for the latter is considerable. Market participants who purchase access to transaction information from each of the exchanges thus recreate the public ticker, albeit receiving the information sooner.

In the end, whether by law or by practice (or both), information about transactions that take place through exchanges is very much out in the open—albeit with some unevenness in distribution for a moment upon its initial release.

2. Quote Transparency

Exchanges also offer a good deal of transparency into their quotes. As with transaction reporting, this feature of exchange trading is a product of both law and market dynamics.

Exchanges must collect and publicly report the best quotes their members post to their electronic limit order books.⁴⁹ Specifically, each exchange must share with the public the number of shares posted at its highest displayed bid quote and lowest displayed ask one.⁵⁰ However, the government-compelled quote reporting need not include any information as to the successively inferior bids and asks that sit on exchanges.⁵¹ Moreover, no law bars exchanges from accepting hidden quotes, and placing them on their limit order books.⁵² In fact, the law explicitly contemplates these quotes, and exempts them from the public-dissemination requirements.⁵³

Despite these rather low legal floors with respect to quote transparency, all major exchanges voluntarily sell more robust proprietary quote feeds to those willing to pay the market price for them. The production of these feeds, just like the ones relating to transaction data, is spurred by market demand for first access to the valuable information contained in them. But access to this full information about just what exchanges' quote books look like must be purchased. And, by definition, even these enhanced informational feeds do not include hidden quotes.

These caveats associated with the clarity of the full exchange quote picture are not small. Today, only select market professionals purchase access to all displayed exchange quotes. Perhaps more importantly, all exchanges now allow hidden quotes, and recent data demonstrates that about 11% to 14% of all trades on exchanges involve transactions that execute against them.⁵⁴ Indeed, specialized quotes placed at the midpoint of an exchange's

49. See Regulation NMS, Rule 602(a), Dissemination Requirements for National Securities Exchanges and National Securities Associations, 17 CFR § 242.602(a) (1992) (“Every national securities exchange . . . shall establish and maintain procedures and mechanisms for collecting bids, offers, quotation sizes, and aggregate quotation sizes from responsible brokers or dealers who are members of such exchange . . . and mak[e] such bids, offers, and sizes available to vendors . . .”).

50. See *id.* at § 602(a)(1)(i).

51. See *id.*

52. See Regulation of Non-Public Trading Interest, SEC, 6 (Feb. 22, 2010), <https://www.sec.gov/rules/proposed/2009/34-60997.pdf> (noting that “the Commission has sought over the years to promote the public display of trading interest by attempting to provide positive incentives for display, but has never sought to prohibit trading venues from offering dark liquidity services to investors.”).

53. See Regulation NMS, Rule 604(b)(2), 17 C.F.R. § 242.604(b)(2)(2005).

54. See *Hidden Volume Ratios*, SEC (Oct. 9, 2013), <https://www.sec.gov>

bid-ask spread appear to be present on exchanges for much of the trading day.⁵⁵ The importance of these particular invisible quotes should not be overlooked, as they improve on the best (highest) displayed bid quotes and best (lowest) displayed ask ones in a way that will generally leave them to be the actual best quotes in the market. After all, when the best bid-ask spread displayed on an exchange is \$10.48 (bid) and \$10.52 (ask), a hidden quote to buy at the midpoint (\$10.50) or sell at the same eliminates a bid-ask spread altogether.

B. Off-Exchange Trading Platforms

While exchange trading is significantly less transparent than thought, the opposite is true with respect to off-exchange trading.

I. Alternative Trading Systems

Looking at the two main dimensions of trading transparency shows that any characterization of ATs as “dark” due to opacity associated with their prices is, at best, greatly exaggerated.

a. Transaction Transparency

Transactions that take place through ATs are equally subject to the law’s transaction-reporting mandate. Rule 601 of Regulation NMS applies not just to “national securities exchanges,” but also to every “national securities association.”⁵⁶ The Financial Industry Regulatory Authority (Finra), formerly the National Association of Securities Dealers, is the only national securities association.

What does all this have to do with pools and transaction reporting? Pools must register with the SEC as broker-dealers.⁵⁷ As a consequence, they must be members of Finra,⁵⁸ and Finra must therefore collect and share information on the price and number of shares transacted in each trade conducted through them.⁵⁹

b. Quote Transparency

Just like its transaction-transparency rules, the SEC’s quote-transparency ones also

/marketstructure/research/highlight-2013-02.html#.V6jEISgrLD8.

55. See, e.g., *Midpoint Liquidity*, NASDAQ (2015), <https://www.nasdaqtrader.com/content/productservices/trading/midpointpeg.pdf> (advertising that “Nasdaq has [hidden] midpoint liquidity for a large portion of the day in high volume securities”); see *id.* (listing a number of securities for which hidden quotes at the midpoint of the bid-ask spread are posted for well over half of the trading day).

56. Regulation NMS, Rule 601(a), 17 C.F.R. § 242.601(a) (2009).

57. Regulation ATS Rule 301(b)(1), Requirements for Alternative Trading Systems, 17 C.F.R. § 242.301(b)(1) (“Every alternative trading system subject to this Regulation ATS . . . shall register as a broker-dealer” with the SEC.); see also Reg ATS Adopting Release, *supra* note 6, at 70859 (noting that ATs must register as broker-dealers to avail themselves of the benefits being regulated as an ATs rather than an exchange (citing Exchange Act Rule 3a1-1(a)(2), 17 C.F.R. § 3a1-1(a)(2)(2009)).

58. See Securities Exchange Act of 1934, § 15(b), Manner of Registration of Brokers and Dealers, 15 U.S.C. § 78o(b)(as amended 2010) (generally requiring brokers and dealers to registered with FINRA).

59. See Regulation NMS, Rule 601(a), 17 C.F.R. § 242.601(a) (2005)(“[E]very *national securities association* shall file a transaction reporting plan regarding transactions in listed [stocks] executed by its members *otherwise than on a national securities exchange.*” (emphasis added)).

apply equally to ATSS.⁶⁰ ATSS must therefore report any *displayed* best bids and asks to the public through the Finra quote-collection mechanism. “Light” pools⁶¹ do just that. However, by default rule, “dark” pools keep their customers’ quotes hidden from traders. They are of course free to do that so long as the customers have consented to that treatment for their orders.⁶²

This does not mean that the liquidity available through non-displaying ATSS resides in some unknowable area of the universe. Quite the opposite, the bids and asks available through them are often readily identifiable for at least savvy market participants.

Recall that “dark” pools typically transact shares at prices that are equal to or better than those contemporaneously quoted on exchanges.⁶³ For this reason, traders can “ping” them to determine whether or not they contain quotes at those prices. For example, they can send “immediate or cancel” orders to an ATS to transact immediately at prices that are at least as good as those then displayed on exchanges. If the orders transact upon submission, then the ATS had quotes at those prices. Also, the exact price of those quotes will be known right away, as ATSS certainly tell the parties to a trade the price at which their orders transacted. They also make that same information available to the public under the transaction-reporting requirements discussed earlier.⁶⁴ The worse-case scenario here is that the pinging order does not execute upon receipt. But even that absence of detection provides valuable information: that the ATS did not have competitively priced shares posted with it at that time and that the order will not transact.

Moreover, the prices available through the handful of ATSS that match the orders of block sellers with those of block buyers⁶⁵ are even more apparent. Those specialized ATSS tell traders their price formula ahead of time (e.g., the midpoint price of the then-operative best bid-ask spread nationwide).⁶⁶ So, when they match clients’ orders against each other, each client has a strong indication of the price at which its order might trade. All they need do is reference the reigning best displayed prices in the market.

2. Internalizing Trading Platforms

The story of internalizing-platform transparency has many similarities to that of ATS transparency. However, internalizing platforms are even more transparent than ATSS.

a. Transaction Transparency

Internalizing platforms are operated by registered broker-dealers.⁶⁷ Finra must

60. 17 C.F.R. § 242.602(a)(1) (2005) (“Every . . . *national securities association* shall establish and maintain procedures and mechanisms for collecting bids, offers, quotations sizes, and aggregate quotations sizes from responsible brokers or dealers who are member of such . . . association, processing such bids, offers, and sizes, and making such bids, offers, and sizes available to [approved information processors] . . .” (emphasis added)).

61. See *supra* note 19 and accompanying text.

62. See Regulation NMS, Rule 604(b)(2), 17 C.F.R. § 242.604(b)(2) (2005); see also Reg ATS Adopting Release, *supra* note 6, at 70867 (contemplating ATSS that hide orders). Moreover, by SEC rule, all block-size orders are to remain hidden unless the quoter requests otherwise. *Id.* at section 604(b)(4).

63. See *supra* Part II.B.1.

64. See *supra* Part III. B.1.a.

65. See *supra* Part II.B.1.

66. See *id.*; *supra* note 27 and accompanying text.

67. See *supra* notes 39–41 and accompanying text.

therefore collect and publicly share the transaction details of all trades these broker-dealers execute off-exchange.⁶⁸ It follows that internalizing platforms report the transactions they facilitate to Finra, which then sends the relevant trade information along to the public processor in the same way as it routes ATS trade information. Accordingly, internalized trades too are completely transparent.

b. Quote Transparency

Unlike exchanges and ATSS, internalizing platforms do not post quotes to any sort of electronic limit order book.⁶⁹ Instead, they have prices at which they will often—but not always—transact the orders that come their way.⁷⁰ For this reason, they fall outside of the SEC’s quote-collection mandate, as there are simply no quotes to be collected.

Despite this state of affairs, the quote-like prices at which internalizing platforms execute trades are readily available. By law, those prices must be at least equal to the best ones then displayed through exchanges.⁷¹ So, investors know the basic floor for internalizers’ bid prices, and ceiling for their ask ones. Indeed, knowing of these common practices, the SEC has long considered such prices to essentially be quotes that are equal to the best ones then displayed in the market.⁷² Moreover, investors know that these platforms generally execute orders at prices that are better than those displayed ones by a tenth or hundredth of a penny.⁷³ Accordingly, internalizing platforms’ quote-like prices are quite clear: they are equal to the best ones displayed nationwide at the time, albeit with nominal price improvement.

* * *

This Part has provided a long-overdue close look at exchange and off-exchange trading transparency. While exchange transactions and quotes are subject to much sunshine, there is considerable cloudiness over the latter. All the while, transactions through ATSS are anything but opaque, and quotes through the same are far from unknowable. Moreover, internalizing platforms are perhaps more transparent along each of these dimensions than even exchanges, given the former’s consistency in prices and the latter’s widespread use of hidden order types. Ultimately, when it comes to transparency, exchange trading and off-exchange trading have much more in common than conventional wisdom suggests. But that is not to say that these platforms do not differ in important ways along other dimensions—such as the one I discuss next in the penultimate Part and focus on throughout the remainder of this paper.

IV. TRADER ACCESS

When it comes to trader access, exchange and off-exchange platforms are quite

68. See Regulation NMS, Rule 601(a), 17 C.F.R. § 242.601(a)(2005) (“Every national securities association shall file a transaction reporting plan regarding transactions in listed [stocks] . . . executed by its members otherwise than on a national securities exchange.”).

69. See *supra* Part II.B.2.

70. See *id.*

71. See *supra* Part III.B.1.b.

72. See Reg ATS Adopting Release, *supra* note 6, at 70854 (“If a market maker executes a customer order at the National Best Bid or [Ask,] rather than at its displayed bid or [ask], the Commission will consider [the national best bid or ask to be] the market maker’s quote for the purposes of that trade.”).

73. See *supra* Part II.B.2.

distinct. Exchanges must allow all traders to access the quotes that rest on their limit order books. But, ATs and internalizing platforms are generally free to determine which traders can and cannot avail themselves of their liquidity. I explain why each is the case in this penultimate Part, and then think about important implications of this trader-access distinction in the final one.

A. Exchange Trading Platforms

By law, nationally registered securities exchanges are open to all comers. Rule 610 of Regulation NMS prohibits exchanges from stopping investors from transacting against the quotes their members post to their trading systems.⁷⁴ Complementing this fair-access rule is a core provision of the Securities Exchange Act that generally requires exchange membership to be open to all SEC-registered brokers and dealers.⁷⁵ In the end, any investor can transact against exchange quotes through any number of competing market professionals.

B. Off-Exchange Trading Platforms

In contrast to exchanges, both ATs and internalizing platforms are permitted to restrict access to their trading systems.

I. Alternative Trading Systems

By its very terms, the fair-access rule that applies to exchanges does not apply to “dark” pools, as that law is focused on fair access to *displayed* quotes.⁷⁶ A separate rule does require ATs to open their doors to all traders.⁷⁷ But that rule only applies to an AT when it hosts 5% or more of all reported trading volume in a publicly traded stock.⁷⁸

When it comes to ATs and trader access, the exception swallows the general rule, as ATs appear to almost universally fall short of the 5% trading-volume threshold.⁷⁹

74. See 17 C.F.R. § 242.610(a) (2005) (prohibiting “national securities exchange[s] [from] . . . prevent[ing] or inhibit[ing] any person from obtaining efficient access through a member of the national securities exchange . . . to the quotations . . . displayed through its . . . trading facility.”).

75. See Securities and Exchange Act § 6(b), 15 U.S.C. § 78f(b)(2)(1934) (requiring national securities exchanges to allow “any registered broker or dealer . . . [to] become a member”).

76. See Regulation NMS Rule 610(a), 17 C.F.R. § 242.610(a)(2005) (“A national exchange or national securities association shall not impose unfairly discriminatory terms that prevent or inhibit any person from obtaining efficient access through a member of the national securities exchange or national securities association to the quotations in [public stock] displayed through its . . . trading facility.” (emphasis added)).

77. See Regulation ATS 301(b)(5)(ii), 17 C.F.R. § 242.301(b)(5)(ii) (“An alternative trading system shall: (A) Establish written standards for granting access to trading on its system; [and] (B) Not unreasonably prohibit or limit any person in respect to access to services offered by such alternative trading system”); see also Reg ATS Adopting Release, *supra* note 6, at 70873 (“The Commission is adopting Exchange Act Rule 301(b)(5) to ensure that qualified market participants have fair access to the nation’s securities markets. As the Commission proposed, an alternative trading system registered as a broker-dealer and subject to Regulation ATS will be required to establish standards for access to its system and apply those standards fairly to all prospective subscribers”).

78. *Id.* at Section 242.301(b)(5)(i)–(ii); see also Reg ATS Adopting Release, *supra* note 6, at 70872 (“The Commission’s focus on fair-access is largely focused on fair access to trading platforms with a large amount of trading volume.”).

79. See Regulation of NMS Stock Alternative Trading Systems, Exchange Act Release No. 34-76474, 81057 (Dec. 28, 2015) (“ATs are not required to provide fair access unless they reach a 5% trading volume

Whether or not these platforms stay below the trigger intentionally, ATSS today are generally free to discriminate among traders.⁸⁰ Moreover, the minority of ATSS operated as crossing networks and the like⁸¹ are exempt from the ATS fair-access requirement altogether.⁸²

As a general matter, ATSS appear to be using their ability to determine which traders can and cannot access them to target certain traders and exclude others. Many are said to ban certain high-frequency traders.⁸³ Still, the precise extent to which ATSS are in fact targeting certain traders and excluding others is an open question, as no empirical study has documented it in detail.

2. Internalizing Trading Platforms

Transacting investor orders internally does not involve the operation of any registered national securities exchange or ATS, as those terms of art are defined.⁸⁴ Nor does it involve firm price quotes.⁸⁵ Instead, internalization merely involves market professionals executing orders on their own, essentially matching the best quotes then displayed through exchanges.⁸⁶ It should thus come as little surprise that no rule requires internalizers to open their doors to all investors.

Much evidence supports the assertion that at least the internalization facilitated by retail-level brokers involves the use of this legal discretion in order to target ordinary, individual Joes and exclude savvy pros.⁸⁷ The SEC has found that these brokers now route nearly 100% of immediately executable orders from their individual-investor clients to these platforms.⁸⁸ Furthermore, all of the main exchange operators have filed applications with the SEC requesting permission to operate off-exchange platforms that explicitly target retail investors and exclude institutional ones.⁸⁹ The stated purpose of

threshold in a stock, which almost all . . . ATSS currently do not.”); *see also* Market Structure Concept Release, *supra* note 7, at 72.

80. *Id.*

81. *See supra* Part II.B.2.

82. *See* Reg ATS, 17 C.F.R. § 301(b)(5)(iii); *see also* Reg ATS Adopting Release, *supra* note 6, at 70873.

83. *See* Public Statement by Commissioner Aquilar, citing a variety of news sources for this proposition. Luis A. Aguilar, *Shedding Light on Dark Pools*, SEC (Nov. 18, 2015), https://www.sec.gov/news/statement/shedding-light-on-dark-pools.html#_ednref14. Interestingly, recent suits by the New York State Attorney General’s Office and the SEC have claimed that major ATSS falsely represented to clients that they would profile and exclude such “toxic” traders. *See* *People v. Barclays Capital, Inc.*, No.451391 ¶ 4, 24 (June 25, 2014) (Amended Complaint Jan. 21, 2015); *In re Barclays Capital Inc.*, Order Instituting Administrative and Cease-and-Desist Proceedings, Exchange Act Release No. 77001 (Jan. 31, 2016).

84. *See supra* note 39 and accompanying text.

85. *See supra* Part II.B.2.

86. *Id.*

87. *See, e.g.*, Comment Letter Suhas Daftuar, Managing Director, Hudson River Trading LLC, to Elizabeth M. Murphy, Secretary, SEC, 1, 1 (Nov. 30, 2011) (noting that internalization is “generally driven by internalizers’ ability to discriminate among potential customers, taking the other side of retail orders which, unlike orders from proprietary trading firms or institutional investors, are unlikely to have short-term adverse impact on the liquidity provider.”).

88. *See generally* Market Structure Concept Release, *supra* note 7, at 21 (“A review of the order routing disclosures required by Rule 606 of Regulation NMS of eight broker-dealers with significant retail customer accounts reveals that nearly 100% of their customer market orders are routed to [off-exchange trading platforms].”).

89. *See, e.g.*, *Order Granting Approval to Proposed Rule Changes Adopting NYSE Rule 107C to Establish*

these initiatives is to compete against internalizing platforms in the market for individual investors' orders to buy and sell stock.⁹⁰ Why wouldn't they pursue these programs? As I discuss in the next Part, there is much money to be made from facilitating retail-investor trades and avoiding certain institutional ones.

* * *

This Part took a careful look at little-noticed regulations pertaining to the extent to which the dominant trading platforms of the contemporary stock market can determine who can and cannot access them. Exchanges are very much public in this respect. Off-exchange platforms are private, with ATs comfortably within exceptions to the general fair-access rules that would otherwise apply to them, and internalizing platforms falling out of the fair-access regime altogether. Moreover, although more is needed with respect to at least ATs, much empirical evidence supports the conclusion that each of these two types of off-exchange trading platforms is in fact using its ability to discriminate among traders to target some and exclude others. Accordingly, the access distinction is a stark one, and—as I argue next—one to which policymakers and commentators should allocate more attention.

V. POLICY IMPLICATIONS

The trader-access distinction between exchanges and off-exchange platforms undoubtedly raises a variety of policy issues. There are at least two such issues that go to core concerns of securities law, one relating to investor protection and the other to stock-price accuracy.⁹¹ The investor-protection issue is the extent to which the targeting and excluding by internalizing platforms harms ordinary investors. The price-accuracy one is that to which such discrimination among traders by off-exchange trading platforms (including both ATs and internalizing platforms) reduces the incentive for sophisticated traders to generate fundamental-value information and impound it into market prices. This final Part articulates the more precise concerns with respect to each of these issues, and touches on what must be done for there to be informed commentary and regulation in this area.

A. Investor Protection

The internalization traceable to retail-level brokers and external stock dealers uses the ability to discriminate among traders to target ordinary, individual investors and exclude institutional ones.⁹² The former, on the whole, are presumed to be engaged in something other than savvy information-based trading,⁹³ the latter often the opposite. Indeed, that is precisely why external stock dealers pay retail-level brokers for the right to transact against

a Retail Liquidity Program for NYSE-Listed Securities, Exchange Act Release No. 34-67347, SEC (July 3, 2012) <https://www.sec.gov/rules/sro/nyse/2012/34-67347.pdf>.

90. *Id.*

91. *See supra* note 1 (noting the prominence of these two concerns in modern securities law).

92. *See supra* Part IV.B.2.

93. *See, e.g.*, Christine A. Parlour & Uday Rajan, *Payment for Order Flow*, 68 J. FIN. ECON. 379, 381 (2003) (“Retail order flow is widely believed to be uninformed.”); Comment Letter Suhas Daftuar to Elizabeth M. Murphy (Nov. 30, 2011), *supra* note 87, at 1 (“Retail investors’ orders are generally considered to be uninformed, in that they are unlikely to cause or have information about short-term price movements.”).

their clients' orders.⁹⁴

Internalization no doubt leaves these “uninformed” investors with trades executed at prices that are at least as good as those contemporaneously quoted through exchanges. By law and industry practice, internalized buy orders are generally transacted at prices that are at least as low as the best (lowest) exchange ask ones then displayed.⁹⁵ Sell ones are likewise filled at prices that are at least as high as the best (highest) exchange bid quotes then posted.⁹⁶ But the quality of those exchange quotes is affected by internalization itself.

Exchange pricing is largely a function of the trading exchanges host. In particular, the higher the ratio of informed traders to uninformed ones transacting through an exchange, the worse its quoted prices.⁹⁷ The liquidity providers quoting those firm prices fear trading opposite better-informed traders.⁹⁸ Quoting bid prices farther down and away from current market values, and ask ones higher up and away from the same, provides protection from those traders—as it makes trading less attractive to them.⁹⁹ In fact, the primary driver of the size of the spread around current market values—and thus price quality—is this information asymmetry.¹⁰⁰

The investor-protection issue associated with internalization today is thus one traceable to the massive diversion of uninformed investors away from the very platforms where the pricing for their orders is set. In short, internalizing platforms appear to remove virtually *all* marketable ordinary-investor orders from exchanges,¹⁰¹ thereby significantly increasing the exchange ratio of informed to uninformed traders. Yet, at the same time, they use exchange prices as the reference point for the transactions they facilitate. Accordingly, ordinary investors often receive the inferior prices associated with the altered exchange trading environment, even though they trade in a very different environment that could command better prices.

Much has been written about issues associated with internalization.¹⁰² Indeed, much debate between the practice's opponents and defenders has taken place in public.¹⁰³ Some of the detractors have even noted the issue of diverting uninformed investors from

94. *See supra* Part IV.B.2.

95. *Id.*

96. *Id.*

97. *See generally* Lawrence R. Glosten & Paul R. Milgrom, *Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders*, 14 J. FIN. ECON. 71 (1985) (modelling market-maker pricing in a market with asymmetrically informed buyers and sellers).

98. *See id.*

99. *See id.* The inferior prices can also increase the extent to which liquidity providers make up from uninformed traders what they lose to informed ones, as those prices increase the size of the bid-ask spread to be earned in return for supplying liquidity services. *See* Albert S. Kyle, *Continuous Auctions and Insider Trading*, 53 ECONOMETRICA 1315 (1985); *see also* HARRIS, *supra* note 37, at 299.

100. *See* HARRIS, *supra* note 37, at 158 (summarizing evidence of the dominant role of information asymmetry in the size of stock-market spreads).

101. *See supra* Part IV.B.2.

102. Notable commentaries include Allen Ferrell, *A Proposal for Solving the “Payment for Order Flow” Problem*, 74 S. CAL. L. REV. 1027 (2001); Note, *The Perils of Payment for Order Flow*, 107 HARV. L. REV. 1675 (1993-1994); Fox et al., *supra* note 2 at 262-76.

103. *See, e.g.*, Senate Hearing, *supra* note 7. Another place to look to get a sense of the vibrant debate is the comment letters filed with the SEC in response to its January 2010 Concept Release on Equity Market Structure. *See Comments on Concept Release on Equity Markets*, SEC, <https://www.sec.gov/comments/s7-02-10/s70210.shtml> (last visited May 20, 2017).

exchanges while continuing to use exchange prices for executing their orders.¹⁰⁴ But others have questioned the magnitude of the issue, noting that the ordinary investors may be no worse off overall despite the inferior prices they receive today.¹⁰⁵ But no work has taken a systematic look at how the practice of internalization of virtually *all* marketable orders submitted by retail-level investors today affects those investors' wellbeing. Likewise, no study has done that while also considering the extent to which other broker-dealer trading platforms and ATSS are engaging in analogous targeting and excluding of their own, thereby further increasing the exchange ratio of informed to uninformed traders. This additional siphoning off of uninformed traders from exchanges should be considered, as the buying and selling through all of these platforms that can discriminate among traders now accounts for almost 40% of all trading.¹⁰⁶

To be sure, such study may generate a consensus view that internalization leaves ordinary investors no worse off. Or, it may reveal investor-protection problems specific to the trading of some stocks, yet not others.¹⁰⁷ But even if that is the case, legal issues with respect to the protection of investors might remain. For one thing, longstanding law requires stockbrokers to provide their clients with "best execution."¹⁰⁸ Reasonable judges and regulators might find these standards to be focused on the quality of price execution, even if that quality is eroded with perfect market counterweights. At least one Senator appears to have come to just this conclusion, stating that "payments [in return for the right to transact opposite retail investors' marketable orders] create another incentive for [internalizing] brokers to maximize their own profits at the expense of best execution of customer orders."¹⁰⁹ For another, many would think closely related concerns for ordinary-investor confidence in the market and general fairness are present here, no matter what the effect of internalization on the number that appears toward the bottom of individual's 401(k) account statements.

Interestingly, along similar lines, recent influential scholarly commentary has suggested that there might be enough valid concern in the area to justify a requirement that retail-level brokers take any payments they receive from external stock dealers, and pass

104. See John C. Coffee Jr., *Competition, Fragmentation, and Market Quality Comment*, in *THE INDUSTRIAL ORGANIZATION AND REGULATION OF THE SECURITIES INDUSTRY*, 78, 81–3 (Andrew W. Lo ed., 1996); Comment Letter Suhas Daftuar to Elizabeth M. Murphy (Nov. 30, 2011), *supra* note 87, at 2 (“[P]ublic quote competition would be more intense if more individual investor orders were sent to and executed on public markets, as the degree of adverse selection on those markets would be reduced.”).

105. See, e.g., James J. Angel et al., *Equity Trading in the 21st Century: An Update*, 5 *QUART. J. OF FIN.* Vol. 27 (2015) (noting indirect benefits of internalization in the form of subsidies for low trade commissions and related brokerage services). Moreover, that transacting through most exchanges—but not internalizing platforms—involves access fees on top of spread costs should not be overlooked. Such access fees are capped at \$0.003/share by the SEC. See Regulation NMS Rule 610, 17 C.F.R. § 242.610 (2005). And part of the access fee often ultimately goes to liquidity providers, which allows them to quote better prices. But these fees are nevertheless a notable aspect of the current exchange-trading landscape, and internalization helps avoid them.

106. See *supra* note 13 and accompanying text.

107. It is possible that internalization leaves ordinary investors who are trading large-capitalization stocks better off, yet those buying and selling smaller stocks worse off. Inside spreads today are, on average, but a penny for the former stocks, and internalization both avoids exchange-access fees while providing some price improvement. For the latter stocks, spreads are larger, leaving more room for harmful inferior price execution for retail-level investors.

108. See *supra* note 37.

109. See Letter from Sen. Carl Levin to SEC Chair (July 9, 2014), at 2.

them on to their investor clients.¹¹⁰ Even if current internalization practices impose no actual harm on ordinary investors, the commentary argues, that fix might be “sufficiently cheap that ‘if it might be broken, fix it.’”¹¹¹ The required pass-through might get ordinary investors much of the value their brokers could demand from those who operate internalizing platforms. It would thus also address congressional concerns about “almost every retail broker keep[ing] these payments rather than passing them on to clients.”¹¹² But the proposal leaves much to be desired should the business of providing *external* internalization services lack sufficient competition. In that case, the payments that would be passed on might be insufficient to make up for whatever is lost when retail orders are not sent onto exchanges. Also, even if that business is perfectly competitive, brokers could still receive all sorts of inducement goods and services from external dealers—perhaps better called *bribes*, ranging from U.S. Open tickets to significant professional services. Moreover, the required pass-on would not stop those brokers from executing their clients’ orders internally—thereby merely forcing internalization back in-house for retail-level brokers. In the end, it is hard to say what the world would look like with the suggested fix in place. A large step forward over the status quo might result for ordinary investors. But there is a good chance that retail investors would just be left with more or less what they receive today, along with perhaps a reduced efficiency should outsourced internalization cease to occur.

Whatever can be said in support or rebuttal of all of these points, at least two things about the investor-protection concern discussed here are clear. First, it deserves close attention. Ideally, that attention would at least initially take the form of study by regulators and law professors, each in conjunction with economists. Second, the issue should be recognized as one traceable to the fair-access distinction between exchanges and off-exchange platforms (both internalizing ones and ATSS). This second insight alone may prove quite valuable in thinking about how to best address the consumer-protection issue—especially since this same disconcerting discrimination among traders plays a role in the erosion of something else that is of value to society, which I discuss in the next and last section.

B. Stock-Price Accuracy

The fair-access distinction also matters for stock-price accuracy, and therefore the social benefits to which more accurate prices lead.¹¹³

For much of this paper, the focus has been on *market* prices (namely, quotes) and *market* values (typically represented by the midpoint between the best quotes in the market¹¹⁴). But stocks also have *fundamental* values—the present value of the future cash flows that their holders expect to receive.¹¹⁵ Indeed, a stock’s *market* value is nothing more

110. See Fox et al., *supra* note 2, at 276.

111. *Id.*

112. Senate Hearing, *supra* note 7, at 2.

113. For a seminal discussion of the main social benefits of enhanced stock-price accuracy in legal literature, see Merritt B. Fox, *Shelf Registration, Integrated Disclosure, and Underwriter Due Diligence: An Economic Analysis*, 70 VA. L. REV. 1005, 1013–14 (1984).

114. See *supra* note 8 and accompanying text.

115. See, e.g., Marcel Kahan, *Securities Laws and the Social Cost of “Inaccurate” Stock Prices*, 41 DUKE L.J. 977, 979 n.11 (1992) (defining a stock’s fundamental value as “the best estimate at any time, and given all information available at such time, of the discounted value of all distributions . . . accruing to a stockholder who

than a reflection of the fundamental-value information known by those who are free to trade on it. When information suggests that that the market has it wrong, the informed buy or sell stock—thereby driving up its price up or down, respectively, to better reflect the fundamental value.¹¹⁶

Market prices of course reflect fundamental values with varying degrees of accuracy. But when those prices are closer to fundamental values, they are said to be more accurate. When they are farther away from those values, the opposite description is applied.¹¹⁷

The degree to which prices are more rather than less accurate turns on the amount and quality of information about firms' future cash flows that is produced, and the extent to which market participants are able to trade on it. Information production and information-based trading are thus important to price-accuracy. Yet, as I theorized in an article published two years ago,¹¹⁸ the requirement that exchanges accept all comers and allowance of off-exchange discrimination among traders interact in a way that undermines each.

The basic idea is closely related to the investor-protection one discussed above. To the extent that the off-exchange platforms are using their greater freedoms under the trader-access rules to target uninformed traders and exclude informed ones, changes occur in the exchange trading environment. Those changes result in exchange liquidity providers quoting inferior inside-spread prices.¹¹⁹ While that trading-environment change alone mattered with respect to the investor-protection issue, the total change that is relevant to the price-accuracy one is far broader.

In response to higher proportions of informed trading relative to uninformed trading, liquidity providers do not just reduce the quality of their best bids and asks. They also reduce the number of shares quoted at those prices and successively inferior ones, and increase the sensitivity to the trigger for adjustments to their price quotes at the same time.¹²⁰ The result is a less liquid market.

However described, the connection between that illiquidity and the incentive to produce fundamental-value information is quite clear. Professor Fox and I discuss this connection more generally in an accompanying piece in this Symposium.¹²¹ The basic idea is merely that informed traders will spot fewer profitable trading opportunities in a less liquid market, as higher spread costs and market prices that are more sensitive to information-based trading limit their ability to buy low and sell high. In the end, the profits to be made from informed trading are curbed. This is precisely the goal at the heart of quote changes liquidity providers make in response to higher ratios of informed-to-uninformed traders in the order flow they face, as the profits of the informed come at their expense.¹²²

Importantly, with a disproportionate amount of informed trading relegated to

continues to hold the stock.”).

116. See, e.g., HARRIS, *supra* note 37, at 6 (“[I]nformed traders . . . estimate fundamental values [and] cause prices to reflect their value estimates.”).

117. Fox, *supra* note 113.

118. Kevin S. Haeberle, *Stock-Market Law and the Accuracy of Public Companies' Stock Prices*, 2015 COLUM. BUS. L. REV. 121 (2015).

119. See *supra* Part V.A.

120. See Glosten & Milgrom, *supra* note 97.

121. Merritt B. Fox & Kevin S. Haeberle, *Evaluating Stock-Trading Practices and Their Regulation*, J. CORP. L. 887 (2017).

122. See Kyle, *supra* note 99.

exchanges that can be accessed by all, and with off-exchange platforms limiting access to informed traders, the brunt of this exchange illiquidity falls on informed traders. Facing higher trading costs, they have a reduced incentive to generate fundamental-value information and impound it into stock prices. Given the size in which they must trade to justify their costly investments in information production,¹²³ these are not small concerns. When all is said and done, society is left with less informative stock prices—and therefore, among other negative things, less efficient capital allocation and corporate governance.¹²⁴

How pervasive is the problem? The answer likely depends on the extent to which off-exchange platforms are in fact targeting uninformed investors and excluding informed ones. We know that internalizing platforms are doing this on wholesale levels by targeting individual, retail-level investors and excluding institutional-level ones.¹²⁵ But the evidence that ATs are often doing the same, albeit in a more fine-tuned way, is considerable too.¹²⁶ But the precise degree to which ATs are in fact targeting uninformed traders and excluding informed ones is an empirical question that has remained largely unanswered.¹²⁷ For that reason, as with the investor-protection issue, more study is in order.

More broadly, it is important to recognize that there are many keys to a market that functions in a way that turns out more accurate pricing. Some of them are found in the law. One is no doubt embodied in government-compelled corporate disclosure. The more information about the condition and prospects of firms produced and shared by firms themselves, the closer market prices and values will track reality. The same can be said for anti-fraud laws, as they increase the reliability of disclosures. But outside information generation matters here too. For those who believe in markets more than firms/corporate executives/regulators, it might matter even more than corporate disclosure. Whatever the benefit-cost ratio of internal information production and sharing versus that of external versions of the same, the law regulating the extent to which trading platforms can and cannot restrict access to their liquidity matters. As a consequence, so too does study of that law that requires open exchanges, while allowing for quite different off-exchange platforms.

* * *

As shown in this Part, the current rules and marketplace practices relating to access to trading platforms raise serious issues with respect to two of the core concerns of 20th and 21st century securities law. Whether or not they are in fact problematic to a degree that compels legal reform requires more study. But given the fair-access distinction's relevance to two traditional core concerns of the field, those rules deserve far more attention than they have received to date. That almost 40% of all trading now proceeds through what I have labeled *discrimination platforms* only adds more reason for providing that attention. Taken together with the debasing of the transparency distinction in Part III, Parts IV and V have thus suggested that far less focus should be allocated toward that distinction, and far more toward the access one.

123. See, e.g., HARRIS, *supra* note 37, at 290 (“[I]nformed traders like to acquire large positions in order to maximize their profits.”).

124. See *supra* notes 58, 113, 115 and accompanying text.

125. See *supra* note 83 and accompanying text.

126. See *supra* Part IV.B.1.

127. *Id.*

VI. CONCLUSION

For years now, hype about problems with the new stock market and its regulation have been in vogue. Much of that hype has been debunked. But the greatly exaggerated distinctions between exchange and off-exchange transparency have shown much resilience. This Article aimed to end the long run of unquestioned assumptions with respect to the transparency distinction by providing a detailed look at the rules that regulate stock-market transparency as well as current market practices relating to the same. In so doing, it showed that exchange trading is far less transparent than conventional wisdom has suggested, and off-exchange trading the opposite.

Having subjected the transparency distinction to close scrutiny, the Article then focused attention on an actual clear-cut distinction between exchange and off-exchange trading. The distinction—relating to trader access—has suffered from the opposite problem: It has largely escaped policymaker and commentator focus.

Does the trader-access distinction matter? It certainly seems to. I explained why the distinction raises two core securities-law issues. The first is related to investor protection, the second to the production of accurate stock prices. Each, I concluded, calls for serious policymaker and commentator attention. But determining the extent to which we should be focused on even this stark distinction between the way in which exchanges and off-exchange platforms are regulated is well beyond the scope of this Article, as much empirical work must first be completed.

All of this is not to say that trading transparency is not an important issue. The cat-and-mouse game traders play thanks to the ability to hide trading interest is no doubt in full session whenever stock markets are open for business. ATSS might very well facilitate that game more than exchanges. Or, the opposite might be true due to the prevalence of hidden order types available through exchanges. But absent additional study that shows otherwise, the present, widespread assumption that off-exchange platforms are less transparent than exchanges in a way that truly matters for the ends of securities regulation appears misplaced.

Moreover, there are undoubtedly other important distinctions relating to exchange and off-exchange trading. For example, off-exchange platforms may generally be able to trade at smaller price increments than exchanges. Likewise, those platforms are generally subjected to less regulation. Each of these realities dictates that, in many areas, off-exchange platforms are better able to experiment and innovate. The flip side of that coin is that exchanges are often less able to do the same. The precise contours of these other distinctions and the extent to which they matter should also be explored. The Article by Professors Fox and Rauterburg in this Symposium is an example of such an exploration.¹²⁸

Whatever the precise import of the transparency distinction between exchanges and off-exchange platforms and these other ones between the same, the detailed description of the law and market practices laid out in this Article gives rise to clear inferences. For one thing, the transparency distinction has been greatly exaggerated, and its implications for securities law over-emphasized. For another, the opposite might be said with respect to the trader-access distinction—as shown by exploring its investor-protection and price-accuracy implications.

Viewed in its entirety, this symposium paper has presented the case for removing

128. Merritt Fox & Gabriel Rauterburg, *Stock Market Futurism*, 42 J. CORP. L. 793 (2017).

focus on the “darkness” of off-exchange trading and increasing the same on the ability of off-exchange platforms to discriminate among traders. It also provided two good starting points for that additional attention on trader access and its implications. *Discrimination* platforms and the law that allows them to be such should thus be scrutinized—with that scrutiny first and foremost applied to their impact on ordinary investors and information production.

More generally, by undertaking a careful review of two key attributes of trading across the two main types of trading platforms today, this Article adds to a recent trend of stock-market analysis in the legal literature (and beyond) rooted in fact over fiction. That alone should help support informed market regulation and commentary, the end goal of a laudable symposium like the instant one.