HEALTHY MARKETS
TRANSPARENCY & TRUST

February 26, 2016

Via Electronic Mail (rule-comments@sec.gov)

Mr. Brent J. Fields, Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549

Re: Regulation of NMS Stock Alternative Trading Systems, File Number S7-23-15

Dear Mr. Fields:

The Healthy Markets Association[1] appreciates the opportunity to provide our views on the Securities and Exchange Commission's proposal for the Regulation of NMS Stock Alternative Trading Systems.[2] Given the increasingly critical role that Alternative Trading Systems ("ATSs") play in our capital markets, improving their operations and disclosures is essential to protecting investors and promoting fair and efficient markets. We applaud the Commission's recent efforts and urge it to further refine and adopt the Proposal without delay.

Summary of Key Recommendations

- Expand the coverage to include ATSs beyond those that trade NMS stocks;
- Consider eliminating conflicts of interest by prohibiting an ATS operator or an affiliate from trading on a principal basis in the ATS, or at a minimum, on terms any different than unaffiliated third-parties;
- Expand reporting of order and trading metrics so that market participants may better evaluate venue performance and conflicts of interest; and
- Modernize and mandate Rule 605 disclosure for all NMS ATS operators separate and distinct from any affiliated broker/dealer.

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[1] Healthy Markets is an investor-focused not-for-profit coalition working to educate market participants and promote data-driven reforms to market structure challenges. Our members, who range from a few billion to hundreds of billions of dollars in assets under management, have come together behind one basic principle: Informed investors and policymakers are essential for healthy capital markets. To learn more about Healthy Markets, please see our website at http://www.healthymarkets.org.

[2] *Regulation of NMS Stock Alternative Trading Systems*, 80 Fed. Reg. 80998 (Dec. 28, 2015) (the "Proposal").

Background and the Need for Reforms

As the Commission noted in the Proposal, in the seventeen years since the adoption of Regulation ATS, "advances in technology for generating, routing, and executing orders" have fueled a rapid evolution in trading strategies and trading venues.[3]

Today, there are currently over forty registered ATSs in operation.[4] Most of them are for the trading of equity securities, although ATSs have also expanded in recent years into other asset classes ranging from government securities, to fixed income securities,[5] to credit default swaps.[6]

Historically, trading volumes in these market centers was low. Then, in 1996, a 21(a) report by the SEC in 1996 found among other things, that Nasdaq Market Makers were utilizing private systems to quote and trade.[7] Over the next few years, the SEC responded by adopting the Display Rule[8] and Regulation ATS.[9] Reg ATS requires all ATSs to be registered as broker-dealers, file basic disclosures with the SEC about their operations, and meet other regulatory requirements.[10]

Yet, the SEC provided little guidance and specificity for ATSs about the substance of their disclosures. While Reg ATS requires disclosure of material facts related to the ATS, the exact specifics of what is required has been subject to widely varying interpretations. In the absence of clear guidance, many ATSs have essentially made their own interpretations of what needed to be disclosed—and to what degree of specificity.

Some ATSs have posted their Form ATS on their websites. Some have elected to share key information about their operations, subscribers, and even their trading statistics on their websites. Some have been more cautious, sharing key information with just their subscribers. While still others have elected to share little to nothing with the public. The result has been inconsistent disclosures across ATSs and by ATSs over time. Further, these disclosures are largely incomparable to those of other market centers, including registered exchanges.[11]

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[3] See generally, Proposal at 81000.
[4] Alternative Trading Systems with Form ATS on File with the SEC as of February 1, 2015, *available at* http://www.sec.gov/foia/ats/atslist0215.pdf.
[5] Press Release, *Liquidnet Launches Fixed Income Dark Pool to Centralize Institutional Trading of Corporate Bonds*, Liquidnet, (September 28, 2015) *available at* http://www.liquidnet.com/#/news/liquidnet-launches-fixed-income-dark-pool-to-centralize-institutional-tradi/.
[6] Alternative Trading Systems with Form ATS on File with the SEC as of February 1, 2015, *available at* http://www.sec.gov/foia/ats/atslist0215.pdf.
[7] Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the NASDAQ Market, *available at* https://www.sec.gov/litigation/investreport/nd21a-report.txt.
[8] *Order Execution Obligations*, 61 Fed. Reg. 48290 (Sept. 12, 1996), *available at* https://www.gpo.gov/fdsys/pkg/FR-1996-09-12/pdf/96-23210.pdf.
[9] *Regulation of Exchanges and Alternative Trading Systems*, 63 Fed. Reg. 70844 (Dec. 22, 1998) ("Reg ATS").
[10] *Regulation of Exchanges and Alternative Trading Systems*, 63 Fed. Reg. 70844 (Dec. 22, 1998).
[11] See Proposal at 81000 ("Although ATSs and registered national securities exchanges generally operate in a similar manner and compete as trading centers for order flow in NMS stocks, each of these types of trading centers is subject to a separate regulatory regime with a different mix of benefits and obligations, including with respect to their obligations to disclose information about their trading operations.").

We monitor transparency in the operations and trading of ATSs.[12] Last year, in conjunction with KOR Group, we reviewed the level of disclosure and transparency across ATSs in a number of key respects, and scored them on our proprietary ATS Transparency Index™.[13] We found dramatic differences across the market, as illustrated in following table (as of May 2015):[14]

ATS	Composite	Public Form ATS	Public Statistics	Public 4552 Data	Order Type Disclosure	Fees Disclosed	Technology	Order / Fill Characteristics	Conflicts	Block Trading Statistics	Other Trading Statistics	Broker-Owned Pool Details
IEX ATS	2.2											
BIDS Trading LP	1.5											
SuperX	1.1											
Level ATS	0.8											
Bloomberg Tradebook	0.6											
UBS ATS	0.6											
Liquidnet Negotiated	0.5											
KnightMatch	0.3											
Barclays LX	0.1											
POSIT	(0.1)											
SIGMA X	(0.3)											
Crossfinder	(0.3)											
Instinet Continuous Block Cross	(0.5)											
Instinct X (MLXN)	(0.8)											
JPMX	(0.9)											
MS POOL	(1.0)											
Apogee	(1.3)											
Interactive Brokers ATS	(1.3)											
LightPool	(1.3)											

Healthy Markets ATS Transparency Index™ (May 2015)

Unfortunately, sparse regulatory obligations have allowed for a disturbing proliferation of abusive practices while simultaneously creating an un-level playing field between ATSs and their natural competitors, exchanges. Since 2011, regulators and prosecutors have brought numerous enforcement cases against some of the oldest, largest, and most-respected ATS operators, including: Barclays,[15] Credit Suisse.[16] eBX, LLC (LeveL),[17] Goldman Sachs,[18] ITG,[19]

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[12] For more information regarding our ATS Transparency Initiative, please see our website at http://www.healthymarkets.org/ats-audit-and-transparency/.

[13] For more information on the ATS Transparency Index™, please see our website at http://www.healthymarkets.org/ats-transparency-index.

[14] We are in the process of updating our index, and expect to release a comprehensive report on ATS Transparency practices in March 2016.

[15] *In the Matter of Barclays Capital, Inc.*, Exch. Act Rel. 34- 77001 (Jan. 31, 2016); Press Release, *A.G. Schneiderman Announces Landmark Resolutions With Barclays And Credit Suisse For Fraudulent Operation Of Dark Pools; Combined Penalties And Disgorgement To State Of New York And Sec Of Over $154 Million*, New York State Office of the Attorney General (Feb. 1, 2016), *available at* http://www.ag.ny.gov/press-release/ag-schneiderman-announces-landmark-resolutions-barclays-and-credit-suisse-fraudulent.

[16] *In the Matter of Credit Suisse Securities (USA) LLC*, 34-77002 (Jan. 31, 2016); *In the Matter of Credit Suisse Securities (USA) LLC*, 34-77003 (Jan. 31, 2016); Press Release, *A.G. Schneiderman Announces Landmark Resolutions With Barclays And Credit Suisse For Fraudulent Operation Of Dark Pools; Combined Penalties And Disgorgement To State Of New York And Sec Of Over $154 Million*, New York State Office of the Attorney General (Feb. 1, 2016), *available at* http://www.ag.ny.gov/press-release/ag-schneiderman-announces-landmark-resolutions-barclays-and-credit-suisse-fraudulent.

Liquidnet,[20] Pipeline,[21] and UBS.[22]

In September 2015, we released *The Dark Side of the Pools*, wherein we provided a comprehensive review of all the significant regulatory actions at that time, and offered a number of recommendations to investors. A copy of that Report is attached as **Exhibit 1**.[23]

A cursory review of the cases finds a panoply of troubling conduct, including:

- trading ahead of or against subscribers' orders;
- selectively sending indications of interest ("IOIs") to algorithmic trading firms, which allowed those firms to execute against subscribers in the pool, but also enabled those firms to trade away—and ahead—of the ATS's subscribers;
- sending subscribers' orders to other market centers without telling those subscribers;
- allowing the ATS operator's smart order router ("SOR") to use subscribers' order information when making unrelated order routing decisions;
- failing to police their pools as advertised, including by rating their own trading desk and HFT firms as less predatory than the objective criteria would indicate;
- providing misleading information about the trading characteristics of the pool and its major participants;
- allowing employees or third-parties who have no role in ATS operations or oversight to have access to customers' confidential trading information;
- failing to construct the National Best Bid and Offer ("NBBO") as advertised;
- accepting and executing sub-penny orders in violation of Rule 612;
- failing to monitor and restrict trading by subscribers in violation of the Market Access Rule; and
- violating the fair access requirements.

Summary of the Proposal

The Proposal seeks to remedy some of the obvious shortcomings in the existing regulatory regime by requiring increasingly detailed public disclosures by ATS operators. Building upon the existing Reg ATS framework, the Proposal outlines a detailed process wherein operators of ATSs that trade NMS stocks ("NMS Stock ATSs") would be required to file Form ATS-N, as well

[17] *In the Matter of eBX, LLC*, Exch. Act Rel. No. 34-67969 (Oct. 3, 2012) (regarding the operations of LeveL)..
[18] *In re Goldman Sachs Execution & Clearing, L.P.*, Letter of Acceptance, Waiver, and Consent, No. 20110307615-01, (Jun. 3, 2014), *available at* http://disciplinaryactions.finra.org/Search/ViewDocument/36604. This matter was handled by the Financial Industry Regulatory Authority (FINRA), as opposed to the SEC and New York Attorney General.
[19] *In the Matter of ITG, Inc. and AlterNet Securities, Inc.*, Exch. Act Rel. 34-75672 (Aug. 12, 2015).
[20] *In the Matter of Liquidnet, Inc.*, Exch. Act Rel. 34-72339 (June 4, 2014).
[21] *In the Matter of Pipeline Trading Systems LLC, Fred J. Federspiel, and Alfred R. Berkeley III*, Exch. Act Rel. No. 34-65609 (Oct. 24, 2011).
[22] *In the Matter of UBS Securities LLC*, Exch. Act. Rel. 34-74060 (Jan. 15, 2015).
[23] A copy of this Report is also available at http://www.healthymarkets.org/dark-side-of-the-pools/. While this Report was completed prior to recent settlements with Credit Suisse and Barclays regarding their operations of Crossfinder, Light Pool, and LX, the nature of the violations in those cases is, in many instances, similar to prior cases. However, the facts in each case are unique, and we urge market participants to examine the each case to determine whether it may impact their order routing decisions or processes.

as amendments thereto, which would contain a number of specifically enhanced disclosures. ATS-N and any amendments to it would also be made public.

Furthermore, an ATS could not begin operations until the SEC affirmatively determines the Form ATS-N "effective." Subsequent amendments would be automatically deemed effective,[24] unless the SEC takes affirmative action to find them ineffective.[25] In making these determinations, the SEC could deem filings ineffective for a number of reasons, including that it finds the filings "materially deficient with respect to their accuracy, currency, or completeness."[26] The Proposal provides a "non-exhaustive" list of examples of materially deficient filings.[27] The SEC could also deem filings ineffective for a number of reasons unrelated to the sufficiency of the filings themselves, including that the would-be ATS operator is not appropriately registered as a broker-dealer.[28]

The Proposal would also allow the SEC to effectively shut down an NMS Stock ATS by suspending, limiting, or revoking its exemption from being an "exchange." Lastly, the Proposal would require all ATSs (not just NMS Stock ATSs) to maintain written safeguards and procedures to protect their subscribers' confidential information.[29]

Proposed Scope of ATS Reforms

The bulk of the Proposal applies exclusively to NMS Stock ATSs. The SEC should broaden the scope of its Proposal to more comprehensively cover ATSs other than just NMS Stock ATSs. The purposes underlying the Proposal apply nearly equally with respect to ATSs trading other assets.

Enhancing and making public all ATS disclosures would aide market participants and regulators.[30] For example, investors would likely be equally concerned with an ATS operator offering preferential treatment (through speed, informational access, or otherwise) to its affiliated proprietary trading desk in an OTC Stock ATS as it would be for an NMS Stock ATS.

Similarly, we believe the SEC should be empowered to suspend, limit, or revoke an ATS's exemption from the definition of an "exchange", irrespective of the assets traded on the ATS. Thus, the SEC should revise Reg ATS to condition the exemption from exchange definition for all

[24] Proposal at 81029.
[25] Proposal at 81029.
[26] Proposal at 81025.
[27] Proposal at 82015 (including as examples incomplete disclosures of an order type's time-in-force limitations, failure to describe exceptions to its priority rules, failure to disclose multiple subscriber classes, inconsistent information about whether it uses SIP or prop feeds for NBBO and matching, and disclosures revealing that the ATS is "apparent" in violating the federal securities laws).
[28] See Proposal at 81024.
[29] Proposal at 81086.
[30] In fact, these efforts would greatly aid brokers seeking to fulfill their regulatory obligations to evaluate execution venues to which they are not connected. See Financial Industry Regulatory Authority, *Best Execution: Guidance on Best Execution Obligations in Equity, Options and Fixed Income Markets*, Regulatory Notice 15-46, at 9 (Nov. 2015)("However, firms are required to evaluate the execution quality of the venues that they have access to and, to the extent information is reasonably available, regularly assess whether other venues to which a firm is not connected may provide the opportunity for best execution.").

ATSs on compliance with all relevant terms, while also building in a process to suspend, limit, or revoke the exemption.

That is not to say that the exact parameters of the reporting requirements for ATSs should be identical regardless of the assets traded. Market characteristics across asset classes are different, and those differences may render some information that is extremely material for one asset class irrelevant for trading in another asset class. But those circumstances are generally rare, and the substantive details of the Proposal could largely translate to disclosures by ATSs trading other asset classes beyond just NMS stocks.

While ATSs in other asset classes may be in their relative infancy, the Commission should not feel compelled to wait to implement basic investor protections until after similar abuses come to light.

Proposed Filing Requirements

The Proposal repeatedly highlights the discrepancy between the filing requirements of ATSs and those for registered exchanges. As the Proposal puts it:

> Unlike national securities exchanges, ATSs are not approved by the Commission, but are instead required only to provide notice of their operations by filing a Form ATS with the Commission 20 days before commencing operations as an ATS. Form ATS is "deemed confidential when filed," and it only requires an ATS to disclose limited aspects of the ATS's operations. ATSs are neither required to file proposed rule changes with the Commission nor otherwise publicly disclose their trading services, operations, or fees.[31]

The Proposal then expresses the SEC's concern "that the current regulatory requirements ... for ATSs, particularly those that execute trades in NMS stocks, may no longer fully meet the goals of furthering the public interest or protecting investors."[32] And, as the Proposal notes,[33] the SEC has received numerous requests to enhance ATS disclosures and harmonize the regulatory regimes for exchanges and ATSs over the years.[34]

In response to these justifiable concerns and urging, the Proposal appears to effectively create a filing process that is remarkably similar to those of registered exchanges. For example, similar to the SEC's review process for exchange applications, a firm seeking to operate a NMS Stock ATS would first be required to file a Form ATS-N and wait for the SEC to declare the filing "effective."

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[31] Proposal at 81001.
[32] Proposal at 81001.
[33] See, e.g., Proposal at 81011.
[34] See, e.g., Letter to Mary L. Schapiro, Chairman, Commission, from Sen. Edward E. Kaufman, United States Senate, (Aug. 5, 2010)(urging the SEC to ""harmonize rules across all market centers to ensure exchanges and ATSs are competing on a level playing field that serves the interests of all investors."); see also Letter to Elizabeth M. Murphy, Secretary, Commission, from Janet M. Kissane, Senior Vice President, Legal & Corporate Secretary Office of the General Counsel, NYSE Euronext, at 3 (Feb. 22, 2010)("ATSs now represent a significant share of trading volume in NMS stocks . . . the time is ripe to move to a framework that has consistent regulatory requirements when the trading activity at issue is essentially the same.'').

[35] In this way, the SEC would interject itself as a gatekeeper to firms seeking to operate NMS Stock ATSs. This would allow the SEC to scrub both the applicant and the substance of the application itself, and deny firms that have failed to meet the necessary requirements.

While asserting that "it is important that Form ATS–N contain detailed disclosures that are accurate, current, and complete,"[36] the Proposal highlights a "non-exhaustive" list of circumstances that would suggest "materially deficient" filings:

- Form ATS–N discloses an order type, "but does not describe the key attributes of the order type, such as time-in-force limitations that can be placed on the ability to execute the order, the treatment of unfilled portions of orders, or conditions for cancelling orders in whole or in part,"[37]
- Form ATS-N "describes some of its priority rules, but fails to describe conditions or exceptions to its priority rules, or fails to describe any priority overlays,"[38]
- "Form ATS–N states that the NMS Stock ATS has only one class of subscribers but the Commission or its staff learns through discussions (during the review period) with the NMS Stock ATS or otherwise that the NMS Stock ATS in fact has several classes of subscribers,"[39]
- "Form ATS–N states that two classes of subscribers are charged the same trading fees but the Commission or its staff learns through discussions with the NMS Stock ATS or otherwise that in fact one class receives more favorable fees than the other,"[40]
- "Form ATS–N includes inconsistent information, such as a statement in one part of the form that the entity uses private feeds to calculate the NBBO, but in another part of the form it indicates that it uses the Securities Information Processor ("SIP"),"[41] and
- "one or more disclosures reveals non-compliance with federal securities laws, or the rules or regulations thereunder."[42]

It is important to note that the SEC's review for compliance with the federal securities laws would be a "red flag" review,[43] comprised largely of scanning for readily apparent violations. These apparent violations could include that the ATS operator has failed to register as a broker-dealer or with a self-regulatory organization,[44] or that the ATS would accept sub-penny orders, in violation of Rule 612 of Reg NMS.[45]

At a minimum, the SEC should perform some level of regulatory review to protect investors and promote fair and efficient markets. That said, we worry that this review may devolve into other market centers seeking to have the SEC preserve their market positions and effectuate their

[35] Notably, the SEC's review of a firm's Form 1, is concluded with an "approval," as opposed to a declaration of "effectiveness." This distinction is important, especially considering the potentially dramatic impact SEC "approval" may have on liability for firms engaging in activities described in the respective filings.
[36] Proposal at 81025.
[37] Proposal at 81025.
[38] Proposal at 81025.
[39] Proposal at 81025.
[40] Proposal at 81025.
[41] Proposal at 81025.
[42] Proposal at 81025.
[43] Proposal at 81025.
[44] Proposal at 81025.
[45] Proposal at 81026.

rent-seeking. These concerns are heightened by the SEC's current evaluation of a high-profile exchange application has become hyper-contentious,[46] political,[47] and slow. We urge the Commission to be mindful of this risk, and work to promptly evaluate and act on initial filings.

With respect to amendments, the Proposal would essentially deem them all effective, unless the SEC affirmatively finds them otherwise, after a notice and hearing. The Proposal suggests that the ATS-N amendments would also be subject to a "red flag" review.[48] The Proposal further explains that the SEC's declaration of "effectiveness" is not an "approval." Nevertheless, we worry that this process may be used to inappropriately inoculate ATS operators from liability. This concern is heightened by a recent court decision in the Southern District of New York wherein the judge found that the SEC's review and approval of exchanges' activities essentially made those activities legal.[49]

The "effectiveness" determination appears to strike a good balance between requiring ATS accountability and promoting investor transparency on the one hand, while not creating a bottleneck or unintended consequences for potential litigants on the other. If such a process had already been in place, a number of the SEC's recent enforcement cases would likely have never existed: the misconduct may have never begun.

Proposed Requirements for When and Why Amendments Must be Filed

The Proposal directs NMS Stock ATSs to amend their ATS-N filings:

1. In Advance: "at least 30 calendar days prior to the date of implementation of a material change to the operations of the NMS Stock ATS or to the activities of the broker-dealer operator or its affiliates that are subject to disclosure on Form ATS–N"[50];
2. Periodically: "within 30 calendar days after the end of each calendar quarter to correct any other information that has become inaccurate for any reason and has not been previously reported to the Commission as a Form ATS–N Amendment"[51]; and
3. Promptly: "to correct information in any previous disclosure on Form ATS–N after discovery that any information filed in a Form ATS–N or Form ATS–N Amendment was inaccurate or incomplete when filed."[52]

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[46] IEX and its supporters have traded numerous volleys with IEX's opponents, including Citadel, NYSE, and BATS. For a more thorough review of the debate, please see the comment file, *available at* https://www.sec.gov/comments/10-222/10-222.shtml.
[47] It was recently reported that conservative activist, Grover Norquist, the founder of Americans for Tax Reform, is pressing Republican Presidential candidates to weigh in support of IEX's exchange application. Patrick Temple-West, *Grover Norquist: Republican presidential candidates need to support IEX*, Politico, (Feb. 10, 2016).
[48] Proposal at 81030.
[49] *In Re Barclays Liquidity Cross and High Frequency Trading Litigation*, 14-MD-2589, at 8 (S.D.N.Y. Aug. 26, 2015). The judge further held that exchanges were absolutely immune from actions arising from the sales of proprietary data feeds and offering of order types, as it found that those activities were sufficiently regulatory in nature. *Barclays*, at 18-20.
[50] Proposal at 81027.
[51] Proposal at 81029.
[52] Proposal at 81029.

The timing and types of these filings is similar to the current ATS filing requirements, although the advanced warning for "material" changes has been pushed out another 10 days. While 20 days may be adequate, we also believe that 30 days still seems to strike an appropriate balance between an ATS's ability to innovate, while also providing market participants and regulators adequate time to evaluate and respond, if necessary.

The definition of what constitutes a "material change" is critical to making this regime work. The SEC currently provides little guidance as to what constitutes a "material change," other than noting that it includes,"any change to the operating platform, the types of securities traded, or the types of subscribers."[53] This level of generality has been of little comfort to ATS operators seeking to comply.

The Proposal shines some much-needed light on this blindspot--at least for NMS Stock ATSs--by revising the standard and outlining a far-more specific, non-exhaustive list of examples of "material" changes. Under the Proposal, "a change to the operations of an NMS Stock ATS, or the disclosures regarding the activities of the broker-dealer operator and its affiliates, would be material if there is a substantial likelihood that a reasonable market participant would consider the change important when evaluating the NMS Stock ATS as a potential trading venue."[54]

The Proposal then provides numerous examples of likely "material" changes:

1. a broker-dealer operator or its affiliates beginning to trade on the NMS Stock ATS;
2. a change to the broker-dealer operator's policies and procedures governing the written safeguards and written procedures to protect the confidential trading information of subscribers pursuant to Rule 301(b)(10)(i) of Regulation ATS;
3. a change to the types of participants on the NMS Stock ATS;
4. the introduction or removal of a new order type on the NMS Stock ATS;
5. a change to the order interaction and priority procedures;
6. a change to the segmentation of orders and participants;
7. a change to the manner in which the NMS Stock ATS displays orders or quotes; and
8. a change of a service provider to the operations of the NMS Stock ATS that has access to subscriber confidential subscriber trading information.[55]

Given the weedy nature of some of these examples, we expect NMS Stock ATS operators to interpret "material" in this context extremely broadly, and thus provide 30 days advanced warning for nearly all changes.

We urge the SEC to resist the temptation to arbitrarily create tiers of materiality. The consumers of ATS disclosures vary widely in business models and sophistication. And when

[53] Proposal at 81005, n.75 (citing 17 C.F.R. 242.301(b)(2)(ii)).
[54] Proposal at 81028.
[55] Proposal at 81028.

measuring materiality in this and other contexts, the Commission has always appreciated that some "material" factors may be more or less important to different market participants. The SEC should not wade into this nettlesome territory, nor should it substitute its priorities and relative rankings of importance for those of diverse market participants.

Lastly, the Commission may be well-advised to expressly permit a process for more rapid action (i.e., under 30 days) by an ATS in the event of some external emergency, such as extreme market events. These circumstances should be rare and only granted upon express approval of the Commission, upon a finding that such action is necessary to protect investors and promote fair and efficient markets.

As revised, we do not believe that these filing requirements would be unduly burdensome for ATSs, and believe that all ATSs -- not just NMS Stock ATSs -- should comply with them.

Proposed Substantive Disclosures

The Proposal greatly enhances the details of required disclosures, as well as makes them public. This is a great step forward for investors and other market participants, including brokers, who would be better equipped to fulfill their responsibilities to consider trading venues as part of their best execution obligations. As detailed below, the Proposal makes great strides towards alerting market participants as to the risks they may face when interacting with a trading venue. Unfortunately, the Proposal simultaneously fails to equip investors or other market participants with the tools necessary to meaningfully evaluate those risks. Thus, under the Proposal, investors and market participants may be left in an untenable conundrum where they would be aware that they may be victimized, but would not know by how much.

In the interest of better protecting investors and promoting more fair and efficient markets, below we (i) offer comments on the qualitative disclosures included in the Proposal, (ii) recommend the adoption of some restrictions on trading by ATS operators and their affiliates, and (iii) recommend the adoption of significant additional quantitative disclosures.

ATS-N: Part I

The Proposal would require an NMS Stock ATS to disclose its name, the identity of the broker-dealer operator, including any "doing business as" name, as well as the ATS's Market Participant Identifier (MPID).[56] We agree that this basic information is critical to market participants and should be disclosed. Again, we see no reason why market participants and regulators would not benefit from these disclosures in other types of ATSs as well.

[56] Proposal at 81038.

ATS-N: Part II

Part II of the ATS-N serves two distinct purposes. First, it would require NMS Stock ATSs to disclose basic, general information about their broker-dealer operator and the the ATS. For example, Part II would require the broker-dealer to disclose its legal status (i.e., whether it is a corporation, partnership, etc.)[57] and information sufficient to confirm that it is appropriately registered with the SEC and FINRA.[58] The ATS operator would also attach (or include the URL to) its Schedule A from its Form B-D (related to owners and officers a) as Exhibit 2A and Schedule B from its Form B-D (related to indirect owners) as Exhibit 2B.[59] Similarly, the ATS would be required to disclose the physical address of its matching system, its mailing address, and its website.[60] None of this information seems difficult to locate, nor does its disclosure appear to be in any way controversial.

There are two areas that the SEC should consider revising. First, the Proposal should be revised to clearly demand the disclosure of all relevant addresses, not just the matching system and mailing address. Second, the SEC should remove the bizarre exception for an NMS Stock ATS run out of a personal residence.[61] As revised, we support these disclosure requirements. That said, we expect this information is likely of limited utility for market participants who are more likely concerned with other matters.

Second, Part II of ATS–N would also "require an NMS Stock ATS to attach, as Exhibit 1, a copy of any materials currently provided to subscribers or other persons, related to the operations of the NMS Stock ATS or the disclosures on Form ATS–N."[62] Further, "[t]o the extent that the NMS Stock ATS discloses information on standardized materials provided to certain subscribers, whether an individual or on group basis," the ATS would be required to make this information available to all subscribers as an attachment to Exhibit 1.[63] While we are concerned with various interpretations of what constitutes "standardized materials," we expect that this would and should include any reporting metrics, including order and execution statistics, that may be provided to customers, including those prepared at the request of specific firms.[64] This

[57] Proposal at 81039.
[58] Proposal at 81039 (detailing that it would require the disclosure of the broker-dealer's "SEC File Number, Central Registration Depository ("CRD") Number, effective date of the broker-dealer operator's registration with the Commission, the name of the national securities association with which it is a member, and the effective date of broker-dealer operator's membership with the national securities association (*e.g.*, FINRA).").
[59] Proposal at 81040.
[60] Proposal at 81039.
[61] Proposal at 81039.
[62] Proposal at 81039.
[63] Proposal at 81040.
[64] Given the rise of increasingly sophisticated transaction cost analysis, as well as the varieties of firms that may be subscribers to an ATS, we expect that ATS operators may become somewhat overwhelmed by performing similar, but yet different analyses for firms. To help alleviate the burdens on ATSs and promote more meaningful comparisons across firms and venues, we separately urge the SEC to significantly revise its reporting obligations under ATS-R as well as Rules 600, 605, and 606, some of which is detailed below. Further, we urge the Commission to more effectively integrate its data and analytical reporting regime with FINRA's already successful collection of ATS data.

information may also assist firms seeking to compare fee structures offered by an ATS and across different trading venues.

To the extent that this information may include statistics or data that may be requested by a firm to help with their cost and best execution analyses, we note that this approach is far-less valuable for market participants than a greatly-enhanced, comprehensive disclosure requirement for this information. Because the Proposal does not include any of that critical information for investors and other market participants, this requirement is essential. However, if the Proposal were to be revised to include enhanced order and execution statistics (as we recommend below), then the need for this other information is greatly lessened. Thus, the Proposal could better restrict the information to be provided for pursuant to Exhibit 1 to marketing materials and fee information.

This approach would also mitigate a risk that NMS Stock ATSs may respond to this new requirement by essentially ceasing to provide subscribers with important information and statistics, so that they may avoid having to make such information publicly available. While it is difficult to quantify this risk, our experience suggests that this reaction may occur, and the result would clearly be the opposite to what the SEC intends: **investors would get less information, not more**. Accordingly, the most appropriate way to structure Exhibit 1 may be to revise it to include all marketing materials, manuals, and fee information, but not customized statistics and information, provided that such statistics and information are otherwise made publicly available pursuant to a greatly expanded quantitative disclosure mechanism. As revised, Exhibit 1 will enhance consistency of information flow to subscribers and the public, and should be adopted.

Again, these disclosure requirements are equally valuable for those seeking to evaluate NMS Stock ATSs as other ATSs. Accordingly, the SEC should consider expanding the Proposal to apply these requirements to all ATSs, not just NMS Stock ATSs.

ATS-N: Part III

Overview of Part III Framework and Recommendations

Part III of the new ATS-N is the heart of the Proposal. The types of relationships and activities that are subject to these disclosure requirements have underpinned the majority of regulators' recent enforcement actions, and generate some of the greatest concerns for market participants.

Part III is intended to inform market participants about:

1. the operation of the NMS Stock ATS and its broker-dealer operator, as well as any arrangements the broker-dealer operator may have regarding the operation of its NMS Stock ATS; and

2. any potential conflicts of interest the broker-dealer operator may have with respect to the operation of its NMS Stock ATS.[65]

The Proposal correctly recognizes the significant potential conflicts of interest between the ATS and its operator, and acknowledges that these conflicts of interest are heightened when an ATS operator or an affiliate trades in the ATS or has access to the pools' subscribers' information.

Although the Proposal states that the Commission "considered" mitigating these conflicts of interest by (1) "requiring NMS Stock ATSs to operate on a stand-alone basis", or (2) "imposing new requirements designed to limit potential conflicts," the Proposal does neither.[66] Instead, the Proposal summarily concludes that the Commission determined that these alternatives "could be significantly more intrusive and substantially affect or limit the current operations of ATSs" more than simply enhancing disclosures.[67] Thus, rather than substantively limit ATSs' conduct, the SEC instead chose to simply enhance some limited elements of ATS disclosures.[68]

We believe that the Commission should more fully evaluate potential substantive restrictions on ATS operators' relationships with ATSs. In particular, the SEC should consider eliminating the unavoidable conflict of interest that arises from an operator's (or its affiliate's) principal trading activities within the ATS or if it is informed by others' trading activities within the ATS. While these practices may lead to increased fill rates and ultimate transaction volumes for an ATS, they also come at the cost of exposing ATS subscribers to profound conflicts of interest that may manifest themselves in numerous--and potentially difficult-to-detect--ways.

There are numerous reasons why **the limited enhancements to disclosures outlined in the Proposal may be insufficient to address these concerns**. Two key reasons are that market participants may not be able to appreciate the nature of a disclosed conflict of interest and, even if they do, they may nevertheless feel compelled to use the ATS.

An ATS operator's disclosures may not provide adequate notice to market participants as to the exact nature of the conflict of interest arising from trading by it or an affiliate in the pool. This inadequacy of disclosure is heightened by the absence of any quantitative disclosures regarding

[65] Proposal at 81043.
[66] Proposal at 81043. Despite the profound nature of this conflict of interest, and its importance to market participants, the Commission appears to have not engaged in significant consideration of either of these resolutions. This was in spite of the fact that the Proposal expressly acknowledges that requiring ATSs to operate on a stand alone basis "would eliminate any potential conflicts of interest." Proposal at 81043. Somewhat inexplicably, the entirety of the Commission's analysis appears to have been relegated to about ½ of a page out of more than 150 pages used in the Federal Register. Proposal at 81130-31. This extremely limited analysis offers no statistics or quantitative support in either direction. There is no analysis of transaction costs to investors. There is no discussion of relative shifts in market shares. There is, quite simply, nothing more than naked conjecture that if this conflicts of interest was prohibited, some ATS operators may stop operating ATSs. Yet, even this conjecture offers no insight as to how or to what degree that may impact market participants. Ultimately, the core of the Commission's justification to ignore this alternative rests on its assertion that to require ATSs to operate on a stand alone basis would "discourage broker-dealers from creating and operating innovative NMS Stock ATS platforms, and instead drive them to execute their own proprietary trades internally on their other broker-dealer systems. In addition, if they were no longer able to trade on a proprietary basis or route customer orders to their own NMS Stock ATS, many broker-dealers may choose to file a cessation of operations report and shut down the operations of their NMS Stock ATS." Proposal at 81130.
[67] Proposal at 81043.
[68] Proposal at 81043.

the size or degree of such conflicted activities. For example, investors would likely find it very important to know if:

1. the ATS operator's primary revenues associated with the ATS were from its own trading, as opposed to commissions / avoidance of transaction fees, or
2. trades executed by an ATS operator had relatively high toxicity metrics.

Yet none of this is required by the Proposal. The Proposal calls for no disclosures about the size or scale of potential conflicts of interest. This may be exacerbated by similar-sounding qualitative disclosures by ATSs who engage in very different activities.

For example, suppose Alpha ATS has an affiliate that trades in the ATS on a principal basis. Suppose further that it has connectivity and access to more information, faster than any subscriber. Now suppose that 90% of the Alpha ATS family's profits associated with running the ATS from its principal trading in the ATS. That might be concerning.

Now suppose Beta ATS also has an affiliate that trades in the ATS on a principal basis. Beta's affiliate has connectivity that is the same as its top-tier subscribers. Let's further suppose that a mere 5% of the Beta ATS family's profits associated with running the ATS are attributable to its affiliates' principal trading. The disclosures required pursuant to the Proposal for both Alpha ATS and Beta ATS could easily be identical. However, investors and routing brokers would likely view these two venues very differently. Alpha ATS may likely be viewed as somewhat predatory in nature whereas Beta ATS would likely pose significantly less risk. What is missing is the scale of the conflicts of interest.

Further, even if a market participant appreciates the nature of the disclosed conflict of interest, and even if it finds the disclosure repugnant, the firm may nevertheless feel legally and procedurally compelled, such as by their best execution obligations or contract, to continue to access and use the ATS. That is because the market participant may be compelled by regulation or contract to monitor and access significant pools of liquidity--even if those pools are conflicted.

In fact, it is partially for these reasons that the Commission has consistently prohibited exchanges from associating with individual broker-dealer members. However, in the absence of a decision to revisit this issue, we urge the SEC to adopt detailed qualitative disclosures along the lines of the Proposal, but then supplement these disclosures with greatly expanded quantitative reporting on a monthly basis (discussed below).[69] We further urge the SEC to adopt a limitation wherein an ATS operator or an affiliate that trades in the ATS must do so on terms **no more favorable** (such as via faster connections or with greater information) than an

[69] As we describe in detail later, the SEC should not seek to simply re-create expanded data reporting for ATSs. Rather, the SEC should simply dictate terms for additional disclosures pursuant to the already-successful reporting regimes, including the FINRA ATS Data reporting mechanism. See FINRA Rule 4552. For more information about this data set, please see https://ats.finra.org.

unaffiliated subscriber to the ATS. This limitation would be a necessary, but insufficient condition for permitting this type of facially conflicted trading in the ATS.

The risks posed by an ATS operator or its affiliate trading on a principal basis in an ATS are fundamentally different in nature than the risks and conflicts of interests inherent in an ATS's decisions to route orders. While these potential conflicts of interest may still be significant, comprehensive disclosures may nevertheless be sufficient to protect investors. These disclosures should include both qualitative discussions, as well as detailed quantitative reporting.

For the purposes of Part III, an NMS Stock ATS operator would be required to make a number of disclosures related to "affiliates", which is defined to mean "with respect to a specified person, any person that directly, or indirectly, controls, is under common control with, or is controlled by, the specified person."[70] This is similar to the language used in the analogous Form 1 used for exchange applications, and seems appropriate. The Proposal then redefines the term "control" to make it clear that the broker-dealer ATS operator is responsible for the actions of the ATS. Although the Commission sought comment on whether it should modify the longstanding 25% ownership threshold that currently serves as a presumption of control, the SEC should decline to unnecessarily muddy these waters. Market participants are well-accustomed to the 25% threshold, which is consistent with other areas of the securities laws, the Bank Holding Company Act, and even the Volcker Rule.

Lastly, we can identify no credible argument as to why the information sought by Part III would not be important to market participants using all types of ATSs. Accordingly, we urge the SEC to expand the Proposal to cover all ATS types, not just NMS Stock ATSs.

Part III: Items 1 & 2

Item 1 of ATS–N would require an NMS Stock ATS to disclose whether the broker- dealer operator or any of its affiliates operates or controls any non-ATS trading center that acts as an OTC market maker or executes orders in NMS stocks internally (including on a principal or agency basis).[71] For each identified non-ATS trading center, the ATS operator would be required to make a number of disclosures related to the nature of the interactions between or preferences regarding the non-ATS trading center and the ATS. This information would include disclosures regarding the maintenance and terms of interactions for a proprietary trading desk. Similarly, Item 2 of ATS-N would require similar disclosures as Item 1, but for any other NMS Stock ATSs.[72]Collectively, these qualitative disclosures are essential to alerting market participants to potentially significant advantages and conflicts of interest for the ATS, and we urge the SEC to adopt them.

Part III: Item 3

[70] Proposal at 81044.
[71] Proposal at 81045.
[72] Proposal at 81045.

Item 3 would require an NMS Stock ATS to disclose whether its operator or any affiliate offers subscribers "any products or services used in connection with trading on the NMS Stock ATS (*e.g.*, algorithmic trading products, market data feeds)."[73] If so, the NMS Stock ATS would be required to "describe the products and services and identify the types of subscribers (*e.g.*, retail, institutional, professional) to which such services or products are offered, and if the terms and conditions of the services or products are not the same for all subscribers, describe any differences."[74] While we generally agree with this approach, this requirement should be refined somewhat to cover products or services used in connection with trading NMS stocks, not just trading on the NMS Stock ATS. As revised, we urge the SEC to adopt these provisions.

Part III: Item 4

Item 4 would require an NMS Stock ATS to describe relationships with unaffiliated trading centers "regarding access to the NMS Stock ATS", including preferential routing arrangements.[75] These arrangements are of particular interest to market participants. For example, investors might be particularly concerned to learn that an NMS Stock ATS had an arrangement wherein it agreed to first route all orders coming to it back out to an unaffiliated non-ATS trading center (e.g., a wholesale market maker) in return for compensation.[76] This type of arrangement may give rise to information leakage and lead to lower quality executions for subscribers--either in the ATS or in other venues. We agree with all elements of this item and urge the Commission to adopt them.

Part III: Item 5

Item 5 would require disclosure of details regarding trading by the NMS Stock ATS operator or affiliates in the NMS Stock ATS.[77] These disclosures are essential to ensure that subscribers have a reasonable understanding of the conflicts of interest posed by the ATS operator's or its affiliates' trading.

Again, we note the direct tie of these disclosures to recent enforcement actions. In that vein, we found one scenario highlighted by Proposal particularly troubling. The Proposal acknowledges that "an NMS Stock ATS may permit orders or other trading interest of all of its affiliates that trade on the NMS Stock ATS to enter through a means that can be used only by the broker-dealer operator or its affiliates and not by non-affiliated subscribers to the NMS Stock ATS (e.g., bypassing the broker-dealer operator's SOR)."[78] Unquestionably, market participants would want to know the specific advantages afforded to the ATS operator or its affiliates, and so we urge the SEC to adopt these provisions.

Part III: Item 6

[73] Proposal at 81048.
[74] Proposal at 81048.
[75] Proposal at 81049.
[76] Proposal at 81049.
[77] Proposal at 81050.
[78] Proposal at 81051.

Item 6 would require detailed disclosures regarding smart order routers and algorithms offered by NMS Stock ATS operator or its affiliates, including how they may interact with the NMS Stock ATS.[79] As the Proposal acknowledges, ATS operators may use smart order routers and algorithms in a number of ways, including to route orders to or from the ATS or even as the exclusive means to access the ATS.[80] Further, the typically close relationship between the ATS operator and the ATS may result in the smart order router having access to confidential customer information from the ATS. In fact, this concern has undergirded recent enforcement cases. Understanding these relationships is essential for customers, and so we support the adoption of the Proposal.

Part III: Items 7 & 8

Item 7 would require the disclosure of people who have responsibilities for the NMS Stock ATS but also provide non-ATS-related services to the ATS operator or an affiliate (i.e., shared employees). By focusing on shared employees, this disclosure obligation is "designed to provide information to market participants and the Commission about circumstances that might give rise to a potential conflict of interest and potential information leakage" As with other portions of Part III, its requirements appear to be in direct response to recent enforcement actions.[81] While we believe accountability for the safeguarding of customer information is essential, we are uncertain as to why this disclosure needs to be public, particularly in light of the Proposal's other reforms regarding the safeguarding of customers' confidential information.

Similarly, Item 8 "would require an NMS Stock ATS to disclose whether any operation, service, or function of the NMS Stock ATS is performed by any person(s) other than the broker-dealer operator," and if so, to make detailed disclosures regarding (1) who it is, (2) what they're doing, and (3) whether they can trade on the ATS.[82] As with the disclosure regarding the operator's employees, this disclosure is intended to help market participants identify and assess the risk of information leakage. However, there may be some significant distinctions between a shared employee and a third-party service provider. A shared employee is likely subject to significantly greater oversight by the ATS operator, including through ongoing training and compliance (including through reviews of emails and trading records). In most instances, the oversight of third parties is significantly less formidable, and may thus result in greater risk of information leakage. Collectively, these disclosures should be adopted.

Part III: Items 9 & 10

Item 9 would require disclosure of differences in functionality between the ATS operator or affiliates and other subscribers.[83] Again, rather than prohibit an ATS operator from giving itself or an affiliate preferential treatment, the Proposal would have the ATS operator simply disclose it. Assuming the SEC continues to decline to prohibit the deeply troubling conflicts of interest

[79] Proposal at 81052.
[80] Proposal at 81052.
[81] See, e.g., *In the Matter of ITG, Inc. and AlterNet Securities, Inc.*, Exch. Act Rel. 34-75672 (Aug. 12, 2015).
[82] Proposal at 81055.
[83] Proposal at 81056.

attendant with allowing an ATS operator or affiliate to trade in the ATS, then we urge the SEC to affirmatively restrict how the operator or its affiliates interact with the ATS so that its functionality is not objectively better than, nor substantively different from, its top unaffiliated, third-party subscribers. If the SEC declines to implement even this basic protection, then the Proposal's requirements from Item 9 are reasonable.

Item 10 would require an ATS to "describe the written safeguards and written procedures to protect the confidential trading information."[84] Further, Item 10 calls for the broker-dealer operator to provide specific details on how customers may agree or opt-out of having their information shared, details regarding who has access to what and why, as well as a prohibition against misuse of this information.[85] Given the risk of misuse of confidential information, these reforms seem appropriate. They also appear to fit well within the framework of the new requirement that all ATSs maintain written safeguards and procedures to protect customer confidential information.

Part IV: ATS Operational Basics

Part IV of Form ATS-N would provide market participants with certain basic information about how the NMS Stock ATS operates. For example, Part IV would require filing of a new Exhibit 4 to provide details regarding:

- hours of operations;
- order types;
- connectivity and order entry;
- segmentation of order flow;
- display of orders and trading interest;
- trading services;
- procedures governing suspension of trading and trading during system disruptions and malfunctions;
- opening, reopening, closing and after-hours trading procedures;
- outbound routing from the NMS Stock ATS;
- use of market data by the NMS Stock ATS;
- fees;
- trade reporting, clearance and settlement procedures;
- order display and execution access; and
- fair access standards.[86]

All of these disclosures are essential for investors or routing brokers seeking to understand how the ATS works. For example, a time-sensitive trader would likely find it very important that an ATS does not use direct feeds to construct the NBBO, but instead uses the SIP.

[84] Proposal at 81058.
[85] Proposal at 81058-59.
[86] Proposal at 81060.

However, these operational disclosures are facially inadequate to inform market participants about the stability and integrity of an ATS. Participants make decisions on venue interaction based on many different considerations. We believe that the following supplemental operational disclosures (in addition to the previously mentioned ones above) would allow participants to make more informed decisions. We urge the SEC to revise the Proposal to require annual disclosure of:

- the number of unique disruptions in previous 3 calendar years, where a unique disruption is categorized as multiple ATS trading participants experiencing technical difficulties with the ATS;
- whether the ATS has ever had a full or partial system failure, and if so, descriptions of each failure (including length of downtime);
- whether the ATS has ever been deliberately taken down rather than allow for a previously unanticipated fail over (a "take down"), and if so, descriptions of each take down;
- the ATS's policies, procedures and expectations for addressing any future failure or take down;
- the number of trading days in which ATS operated from its disaster recovery location in the previous 3 calendar years.
- details regarding the ATS's efforts in clock synchronization, including technology and protocols used;
- a listing of the feeds used to construct the NBBO for order routing and matching purposes;
- the approximate latency (in microseconds) to receive market data feeds (from the point of network ingestion of the data), assemble the NBBO and deliver the updated NBBO to the matching engine, as well as the:
    - Mean
    - Median
    - Standard Deviation
    - 90th and 99th percentiles
- If the ATS offers collocation or a cross-connect in the same data center that houses the matching engine, or any other type of speed-segmented access options:
    - the number and class types of firms that are collocated / cross-connected / speed segmented (Note: Assumes detailed description of subscriber class type determinations in the ATS-N);
    - the percentage of orders entered and partially or completely filled by participants that are collocated / cross-connected / speed segmented.

Market Quality Statistics Reporting

The Commission has an excellent opportunity to enhance ATS disclosure requirements to address the problem that the Commission identifies in the Proposal:

> Given the dispersal of trading volume in NMS stocks among an increasing number of trading centers, the decision of where to route orders to obtain best execution for market participants is critically important. … market participants have limited information about how these markets operate. The Commission is concerned that this lack of operational transparency impedes market participants from adequately discerning how orders interact, match, and execute on NMS Stock ATSs, and may hinder market participants' ability to obtain, or monitor for, best execution for their orders.[87]

While operational disclosures are critically important, they tell a small piece of a much larger story. As the Commission notes, the above concern about market participants' ability to obtain best execution being hindered is primarily based on "increasing operational complexity of NMS Stock ATSs."[88] It is due to this very complexity that simple operational disclosures are inadequate. First, more detailed operational disclosures are required, and are suggested above. However, more importantly, participants must be given the ability to understand how these disclosures manifest in terms of order flow and participant interaction. As such, further detail on order flow and trade dynamics is warranted, and detailed suggestions are made in **Exhibit 2**.

The Commission says that the "proposed Form ATS-N would be generally similar to the information disclosed by national securities exchanges about their operations."[89] However, there is a fundamental difference in this analogy - **participants have public market data to assess trading dynamics on a public exchange. They do not have the same data for an ATS.** We therefore believe it is incumbent upon the Commission to mandate a set of disclosures to supplement Rule 605 that provides a far more detailed and quantitative view of the trading dynamics on an ATS.

Nearly all of our suggested quantitative disclosures address the fundamental issue that the Commission is trying to confront: ensuring that market participants can assess ATS performance, including in comparison to registered exchanges. This is the fundamental conundrum of participants who are trying to make venue interaction decisions while upholding their best execution responsibilities.

Currently mandated public disclosures are facially inadequate to compare and evaluate ATSs with each other, and with registered exchanges. Item 16 of Part IV of Form ATS-N would

[87] Proposal at 81060.
[88] Proposal at 81060.
[89] Proposal at 81060.

require an ATS to "explain and provide certain aggregate platform-wide market quality statistics that it publishes or provides to one or more subscribers."[90] This information is intended to supplement information reported pursuant to Rule 605. However without mandating a minimum level of disclosure, the Commission runs the risk of participants receiving inadequate information with which to make venue interaction decisions.

Instead, the Commission should utilize a combination of disclosures to ensure that participants have all of the information that they need to make venue interaction decisions and satisfy their best execution requirements. This combination would consist of:

1. Monthly disclosures as part of Rule 605;
2. Periodic disclosures that are included under Part IV of ATS-N; and
3. Monthly disclosures included under enhanced FINRA ATS data collection.

Leveraging Rule 605 makes sense insomuch as it already provides a mechanism for monthly quantitative disclosures. The periodic disclosures under Part IV would already be mandated, and therefore add little additional burden on ATSs. Finally, the FINRA ATS data collection is now occurring with minimal effort on the part of ATSs. We believe that our quantitative disclosure regime would represent little additional effort on the part of ATSs to implement, other than the initial development of metrics that many are already tracking.

Rule 605

Rule 605 is a lynchpin of the current disclosure regime. However, it suffers from fundamental flaws in having not been updated as technology has revolutionized equity market trading. The primary deficiencies are:

1. Low coverage of trading activity due to proliferation of new order types, especially Pegged order types, which are most commonly used on ATSs.
2. No coverage of order sizes over 10,000 shares, which again are most commonly used on ATSs.
3. Metrics that provide little useful information, such as execution time (where the majority of venues show 0-9 seconds for most executions).
4. Data that may not reflect the reality of execution dynamics on the ATS - if an ATS uses direct feeds, there is still a Rule 605 requirement to base execution quality disclosures on the SIP.
5. Specifically regarding ATSs, many ATSs include their Rule 605 disclosures in their broker/dealer parent filing, which muddles the information of the routing broker and ATS.

[90] Proposal at 81084.

As such, Healthy Markets has in the past proposed updates that address all of these issues. We have reviewed our past proposals and updated them, and are including these proposals as **Exhibit 2**. The primary benefits of these enhancements to Rule 605 would be to ensure:

1. Complete coverage of all order types.
2. Complete coverage of all order sizes, including odd-lot and block orders.
3. Utilization of modern metrics, including execution time, realized spread, quoted spread and new metrics for limit orders.
4. A clearer picture of an ATS's trading as distinct from the trading of its affiliated broker-dealer.

We further support other efforts to improve Rule 605, and encourage the Commission to include changes to Rule 605 as part of their ATS transparency efforts.

Additional Part IV Disclosures and FINRA ATS Data Collection

As previously stated, participants are able to make detailed liquidity and order flow profiles of public Exchanges due to the availability of public market data. The same is not true for ATSs. Further, despite the availability of Rule 605 data, participants (and the Commission) have been unable to recognize behavior that would later become the subject of enforcement proceedings. As such, while we commend the Commission on its attempts to modernize disclosure, we believe that **additional quantitative disclosures are required for participants to uphold their best execution responsibilities**.

We have attempted to identify a comprehensive list of important metrics that, in our experience, are often relied upon when making venue interaction decisions and to satisfying best execution responsibilities. We expect that many of these metrics could be calculated by FINRA given the data they are currently collecting. Others could be calculated by FINRA if they were to collect some additional information, or they could be disclosed on a regular basis via FINRA's current ATS disclosure site, or via periodic Part IV disclosures.

We have included a set of ATS-specific metrics in **Exhibit 3** below, which focuses on the following quantitative disclosure categories:

- **Order and Trading Descriptive Statistics**: These statistics would provide detailed information on incoming order sizes and the resulting trade sizes. Further disclosures would provide more detail on price improvement (a principle feature of ATSs) and principal trading (one of the areas of most concern for abuse). Nearly all of this data could be generated with current FINRA data collection.
- **Subscriber Characteristics**: Most ATSs segment their participants and allow them to opt-out of interacting with other segments or categories. Looking to industry best practices allows us to adopt current disclosure practices and mandate them across ATSs to provide a far more detailed look into the trading characteristics of subscriber segments, and would allow participants to uphold their best execution responsibilities

when making decisions over interacting with venues and specific participant segments on those venues.

- **ATS Relationships and Trading Statistics**: As the Commission has made clear throughout the Proposal, the conflict-of-interest when an ATS operator trades in its own pool, or has arrangements with other market centers and participants, is one of the most important aspects of the new disclosure regime. The SEC has an opportunity to not only ensure such relationships are disclosed, but to quantify the importance of those relationships and the associated trading activity.

These regular disclosures will provide participants a wealth of needed information as to the characteristics of order flow and trading activity, the nature of various subscribers on the ATS, and they will quantify the extent of the conflicts-of-interest faced by the ATS.

We urge the Commission to adopt these specific disclosures, and have worked with several ATSs to ensure that such a regime would not be overly burdensome. We are concerned that in the absence of specific disclosures, a fragmented regime will emerge in which it becomes difficult, if not impossible, to make reasoned comparisons across venues and across time. If this were to occur, participants will have more difficulty satisfying their best execution responsibilities, as the Commission indicates it is concerned about.

Protecting Confidential Information

Lastly, the SEC appears to be closing a loophole that affects all ATSs. Rule 301(b)(10) currently requires "every ATS to have in place safeguards and procedures to protect subscribers' confidential trading information and to separate ATS functions from other broker-dealer functions, including proprietary and customer trading."[91] However, nothing requires those safeguards and procedures to be written.[92]

We agree with the proposed amendment to Rule 301(b)(10) to require all ATSs (not just NMS Stock ATSs) to have these safeguards and procedures in writing. As a matter of practice, while significant ATSs have largely reduced their practices to writings, those writings likely occur in multiple formats and in different forms (such as in the broker-dealer's written supervisory procedures). The proposed reforms would aid investors, other market participants, and regulators by consolidating these safeguards and procedures in one place for easy review and evaluation. Further, the process of consolidating these safeguards and procedures may facilitate ATS operators' identification of gaps or opportunities for improvement of these measures.

[91] Proposal at 81086.
[92] Proposal at 81086.

Conclusion

Healthy Markets thanks the Commission for considering our recommendations to bolster the effectiveness of this new rule proposal. Should you have any questions or wish to discuss our recommendations in further detail, please do not hesitate to contact us.

Respectfully Submitted,

Dave Lauer
Chairman
Healthy Markets Association

Cc: Hon. Mary Jo White, Chair
Hon. Michael Piwowar, Commissioner
Hon. Kara Stein, Commissioner
Stephen Luparello, Director, Division of Trading & Markets
Gary Goldsholle, Deputy Director, Division of Trading & Markets
David Shillman, Associate Director, Division of Trading & Markets
Dan Gray, Senior Special Counsel, Division of Trading & Markets
Rick Fleming, Investor Advocate

THE DARK SIDE OF THE POOLS:

What Investors Should Learn From Regulators' Actions

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The views expressed in this report are those of its authors and do not necessarily reflect the views of our Members, Funders or those who provided review. All errors are our own.

ABOUT HEALTHY MARKETS

Healthy Markets is a not-for-profit association of institutional investors working together with other market participants to promote data-driven reforms to market structure challenges. Our members, who range from a few billion to hundreds of billions of dollars in assets under management, have come together behind one basic principle: Informed investors and policymakers are essential for healthy capital markets.

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Twitter: @healthymkts

EXECUTIVE SUMMARY

The evolution of modern capital markets has been stunning in its speed and breadth. The financial services industry of today would be unrecognizable to market participants of a generation ago. Order and execution information that was once communicated through hand signals and gruff voices now rockets through fiber optic cables and microwave towers around the world in fractions of a second. In the US, trading that was at one time dominated by one or two exchanges may now occur at any of 11 exchanges, several dozen dark pools, or hundreds of broker-dealer "internalizers."

In recent years, one particular form of Alternative Trading System (ATS), the so-called "dark pool," has rightly received increased attention from investors and regulators. Dark pools are generally thought of as venues with no pre-trade price transparency, unlike Exchanges or other venues where orders of specific size and price are public. For institutional investors—many of whom manage retirement savings, university endowments, and the wealth of millions of people around the world—placing orders in the lit markets would allow other traders to easily run ahead of their trades, leading to higher execution costs and lower overall performance. Dark pools have thus replaced the "upstairs" market of yesteryear, and have grown rapidly from comprising just 4% of US equities trades in 2008 to around 16-18% today.

For institutional investors, the need for dark pools has never been greater. High-speed traders armed with cutting-edge technology have grown stunningly adept at identifying, exploiting, and profiting from large orders. To gain even more of an edge, some of these high-speed traders have been awarded special—and sometimes secret—privileges from market centers, such as greater or faster access to information, or specialized order types. Lured into dark pools by promises of "safe" trading, institutional investors have increasingly sought refuge from this technological assault.

Unfortunately, an outdated regulatory framework, a paucity of publicly available order and execution data, and an inability to test dark pools' claims have provided innumerable opportunities for abuses. Over the past couple of years, these abuses have been detailed in well-read books, Congressional hearings, and by whistleblowers, not to mention daily press reports. Far from providing safe havens, some dark pools operators have proven to be the very high-speed traders that they were purportedly defending investors against.

Prior to 2011, no U.S. regulator had brought any meaningful action against any dark pool. When regulators' attention finally turned to dark pool operations, the number of cases—and the sizes of the fines—multiplied. Today, regulators have settled, or are reportedly in negotiations to settle, more than half a dozen cases against dark pool operators. All told, between November 2014 and August 2015, over 79 billion shares were traded on ATSs that have been accused of wrongdoing or have settled with regulators.

In this report, we examine the most significant of these cases: Pipeline (2011), UBS (2015), and ITG (2015). We also briefly survey, to the extent possible, cases that are reportedly imminent against Barclays and Credit Suisse.

The misconduct identified in these cases has been as troubling as it has been widespread:

- Pipeline's trading desk accounted for over 95% of the executions in its dark pool at some points, and it surreptitiously took advantage of its customers' order information for years.
- UBS created and selectively marketed custom-designed order types for high-speed traders, accepted millions of orders in sub-penny increments in blatant violation of SEC Rule 612, and shared customers' order information with over a hundred people who didn't need it.
- ITG created a secret trading desk that had inappropriate access to confidential customer order information, the sole purpose of which was to profit by exploiting those same customers.

> *We've learned that even the largest, oldest, and most well-respected dark pools are not above wrongdoing.*

After exploring the contours and implications of these cases, the Report outlines some clear lessons for investors. Chief among them, we've learned that even the largest, oldest, and most well-respected dark pools are not above wrongdoing. Any dark pool may engage in misconduct, and that misconduct may remain undetected and unfettered for years. Worse yet, several years will often pass between the time that regulators first learn of misconduct and the time that the details of said misconduct are made public. This means that market participants may continue routing orders to venues based on clearly misplaced trust for years. And while regulators seem content to focus on inadequate disclosures, they do not seem focused on protecting investors from substantive abuses (such as by prohibiting abusive practices). To be sure, regulators are catching up, but they started far behind and have far to go.

The remainder of the Report outlines a path forward for investors. Recent and pending regulatory actions against dark pools have irreparably damaged investors' confidence in their trading venues, and must lead to fundamental changes in how investors interact with them. In the aftermath of these cases, investors are faced with two related sets of questions.

The first set of questions revolves around how an institutional investor can feel comfortable continuing to execute trades in a particular dark pool. Right now, investors and their brokers

need to consider whether they should continue trading with those ATSs that have been involved in regulatory actions. They need to ask, have I been harmed? If so, should I seek damages? Can I trust my history with this venue? Can I trust the execution metrics that I have used in the past? Can I find out enough about the ATS's operations to feel comfortable routing order flow there? Can I afford to not route an order to a particular dark pool? In our view, investors and brokers should be able to trust historical experiences and execution metrics, but should also recognize their limitations.

The second set of questions asks what investors can do to protect themselves going forward. How can I protect my customers' assets? What disclosures are good enough? Should I send out surveys to the brokers and ATSs that I use? What should my "best execution" committee be doing? In essence, how can I fill the gaps created by the structural flaws in the regulation of dark pools?

The SEC and other regulators certainly need to fill some of those gaps in the years ahead, but we are not optimistic that any regulatory reforms will be either timely or adequate. To enable investors to better protect themselves, we recommend the following:

- **Strengthen Dark Pool Disclosures**. Investors should demand better public and private disclosures. To the extent possible, these disclosures should be standardized across market venues. Investors need to know how dark pools operate and how their orders are handled. At the same time, investors and regulators need to have high-quality order routing and execution data against which to test brokers' and venues' performance.

- **Avoid and Mitigate Dark Pools' Conflicts of Interest.** Investors should demand lesser conflicts of interest from dark pools and their operators. Investors should make informed decisions about the risks of interacting with dark pools that have an affiliate trading for profit in the pool, and should determine whether or not those trading operations are adequately disclosed. Even with disclosure, the risk of abuse remains high.

- **Update Policies, Procedures, and Practices Regarding Best Execution.** Investors should update and modernize their practices regarding best execution and fiduciary obligations. This is essential for investors to minimize their trading costs and fulfilling their fiduciary obligations to their clients.

- **Promote and Reward More Transparent and Less-Conflicted Trading Venues.** Over the long term, investors should continue their efforts to promote independent alternative trading venues whose business models are better aligned to protect the interests of their underlying customers. In addition to providing higher quality venues for investors, these efforts may act as a powerful catalyst to drive reforms at other trading venues.

In each of these endeavors, investors should promote rigorous best practices by their brokers, by the dark pools to which they route orders, and within their own trading strategies. Investors can and should demand regulatory requirements that far exceed those in place today.

Dark pools perform a critical function for investors and are not going away. Unfortunately, holes in the regulation and oversight of dark pools have created a trading environment in which investors must blindly trust dark pool operators. The breadth, depth, and severity of recent regulatory actions plainly demonstrates that investors cannot blindly trust any dark pool. Investors are now warned. They must better protect themselves. Their fiduciary obligations demand it of them.

INTRODUCTION TO DARK POOLS

Off-exchange trading is a critical element of today's US equities markets. Roughly 35% of all US equities trades occur off-exchange, with 16 to 18% of trades occurring in dark pools. It wasn't always this way. For decades, trading in stocks was generally restricted to formally regulated exchanges dominated by a small handful of actors. Then, starting in the 1980s, a host of new options began to emerge. These new trading venues have come to be called "alternative trading systems" or ATSs.

Some of these ATSs allow for trading without revealing the identity of counterparties or displaying specific order information. These have come to be known as "dark pools." Many large institutional investors have been drawn to dark pools over exchanges because dark pools may allow them to execute trades in larger sizes without tipping off predatory traders or significantly impacting market prices.[1]

Perhaps due to their historically small volume of trading, these venues existed for several years before federal regulators began exercising oversight and imposing meaningful regulation upon them. In 1998, the SEC adopted Regulation ATS, which required all ATSs to be registered as broker-dealers, thus subjecting dark pools to FINRA oversight. As part of this process, all ATSs had to file basic disclosures with the SEC about their operations and meet other regulatory requirements.

With the adoption of Regulation NMS, decimalization, and the rise of algorithmic trading, dark pools began to proliferate. Indeed, their trading volumes have verily exploded. From just a handful of dark pools when Reg NMS was adopted in 2005, there are over forty in operation today.[2] Similarly, while it has been estimated that dark pools accounted for just 4% of trading as

[1] As one finance professor commented to the SEC during its consideration of Regulation ATS, "Instinet began because institutions wanted an anonymous way to trade large blocks of stocks thereby minimizing information leakage." Letter from Daniel G. Weaver, Associate Professor of Finance, Baruch College, to Jonathan Katz, Secretary, Sec. and Exch. Comm'n, Nov. 23, 1998.

[2] Alternative Trading Systems with Form ATS on File with the SEC as of February 1, 2015, *available at* http://www.sec.gov/foia/ats/atslist0215.pdf.

recently as 2008,[3] that number currently hovers around 18%.[4]

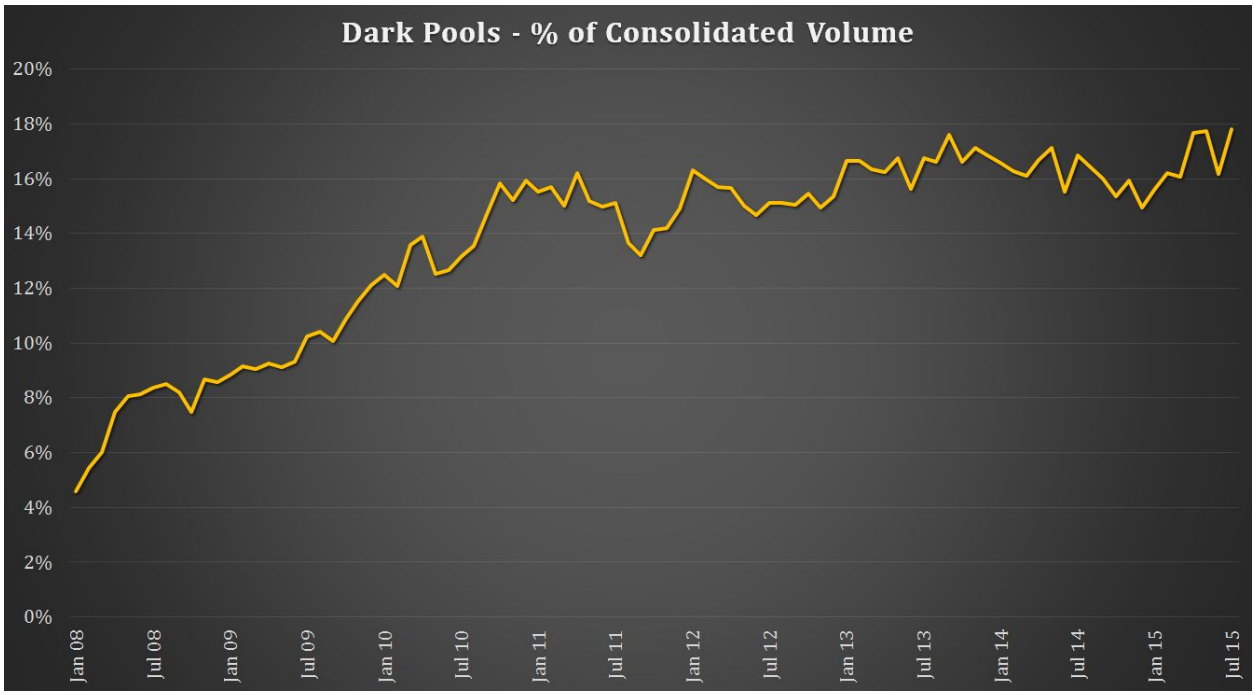

Figure 1: Dark Pool as Percent of Total Consolidated Volume. Rosenblatt Securities, Sept. 2015.

There are many reasons for this rapid rise in popularity. Institutional traders have always worked to execute their large trades without tipping off the markets before their transactions were completed. Historically, these types of trades were done "upstairs" at the New York Stock Exchange.[5] Information leakage was a significant problem "upstairs"[6] and investors were eager for alternatives. In many ways, dark pools began as an answer to the leakage problem.

The first dark pools were created to facilitate smooth institutional trading without the consequent market impact associated with displaying institutional-sized orders on a lit venue.[7] Dark pools offered a similar opportunity to an "upstairs" trade, but with ostensibly more robust electronic security over sensitive information. In addition, institutional investors have

[3] Rosenblatt Securities, Sept. 2015; *but see*, Scott Patterson, *'Dark Pools' Face Scrutiny*, Wall St. Journal (June 5, 2013) (estimating trading at 4% in 2009).
[4] Rosenblatt Securities, Sept. 2015.
[5] *See, e.g.*, Donald B. Keim and Ananth Madhavan, *The Upstairs Market for Large-Block Transactions: Analysis and Measurement of Price Effects*, The Rev. of Fin. Studies, 1–36 (Spring 1996).
[6] For example, one study of over 5500 "upstairs" trades from 1985 to 1992 found that price movements prior to the trade date were "significantly positively related to trade size, consistent with information leakage as the block is "shopped" upstairs." Donald B. Keim and Ananth Madhavan, The Upstairs Market for Large-Block Transactions: Analysis and Measurement of Price Effects, The Rev. of Fin. Studies, 1–36 (Spring 1996).
[7] *See* Letter from Daniel G. Weaver, Associate Professor of Finance, Baruch College, to Jonathan Katz, Secretary, Sec. and Exch. Comm'n, Nov. 23, 1998.

increasingly flocked to dark pools to avoid algorithmic traders that have become ever more effective at identifying and exploiting large orders.

Dark pools were also less expensive than exchanges for brokers. As exchanges began to increase rebates and access fees, brokers came to recognize that crossing trades in their own ATS could hold significant benefits from both a cost and reputational standpoint. Large ATSs could also attract more flow in a beneficial feedback loop, and increase the broker's volumes, market share, and revenues.

Increasing their fill rates and executions meant that dark pools had to find counterparties for their resting orders. This task has always been a significant challenge. Simply stated, it is relatively rare that at the exact same time one mutual fund complex wishes to sell one million shares of a particular stock, another institution in the pool will just happen to want the same million shares. Of course, from a trader's perspective, the longer an order rests in a dark pool, the greater the risk of information leakage and increased opportunity costs.[8]

Dark pools have taken several different approaches to solving this problem. Most have attempted to solicit as many institutional subscribers as possible, thus increasing their odds of matching trades with counterparties. Some have set up their own high-speed trading desks within these pools, or granted access to their affiliated broker-dealers, to take the other sides of trades. Still others have welcomed third-party high-speed traders.

> *The limited transparency into dark pool operations, order types, matching algorithms, and even participants creates an attractive opportunity for high-speed traders.*

High-speed traders pose an interesting dilemma for many dark pool operators. Dark pools have long offered high-speed traders coveted opportunities to interact with more uninformed[9], large

[8] Quantitatively measuring execution costs, particularly opportunity costs, has historically been difficult. Early studies suggested that trading costs for trades executed on ATSs were significantly lower than those for trades executed on exchanges. *See, e.g.*, Jennifer Conrad, Kevin M. Johnson, and Sunil Wahal, *Institutional trading and alternative trading systems*, Journal of Fin. Econ., 70, 99–134 (2003) (reviewing approximately 800,000 orders from 1996 and 1998). However, once studies started to more fully account for the costs of trades not being executed and adverse selection, then some of the perceived cost benefits deteriorated. See, e.g., Randi Naes and Bernt Arne Ødegaard, *Equity Trading by Institutional Investors: To Cross or Not to Cross?*, Journal of Financial Markets, 79-99 (May 2006). Some recent studies suggest that the costs of unexecuted orders in dark pools may be quite significant. *See, e.g.*, Haoxiang Zhu, *Do Dark Pools Harm Price Discovery?*, Rev. of Fin. Studies, (2014) (noting "[b]ecause matching in the dark pool depends on the availability of counterparties, some orders on the "heavier" side of the market—the side with more orders—will fail to be executed. These unexecuted orders may suffer costly delays.").

[9] From a statistical perspective, "informed" order flow has a short-term (measured in milliseconds, seconds or minutes) perspective on price movement that is correct often enough to cause market makers to lose money. Uninformed flow (such as institutional or retail) has a long-term perspective with little concern over short-term price movements.

sized orders. The limited transparency into dark pool operations, order types, matching algorithms, and even participants creates an attractive opportunity for high-speed traders. In some cases, high-speed traders have found dark pool operators willing to work with them to customize and selectively disclose order types, matching priority and other ATS features. These technology-driven traders also noticed that many dark pools had inferior technology systems, which could be exploited.

From the perspective of the dark pools, on one hand, accepting some high-speed traders into a given pool could increase fill rates, execution volumes, and market share. On the other hand, too many high-speed traders could substantially erode the benefits offered by the pool as compared to a traditional exchange. Many dark pools have come down on the side of welcoming some high-speed traders into their pools.

As high-speed traders entered the pools, trading volumes sky-rocketed, but the characteristics of dark pools changed. Execution sizes came down, as shown in Figure 2 below, ultimately converging at the same value as on lit markets.

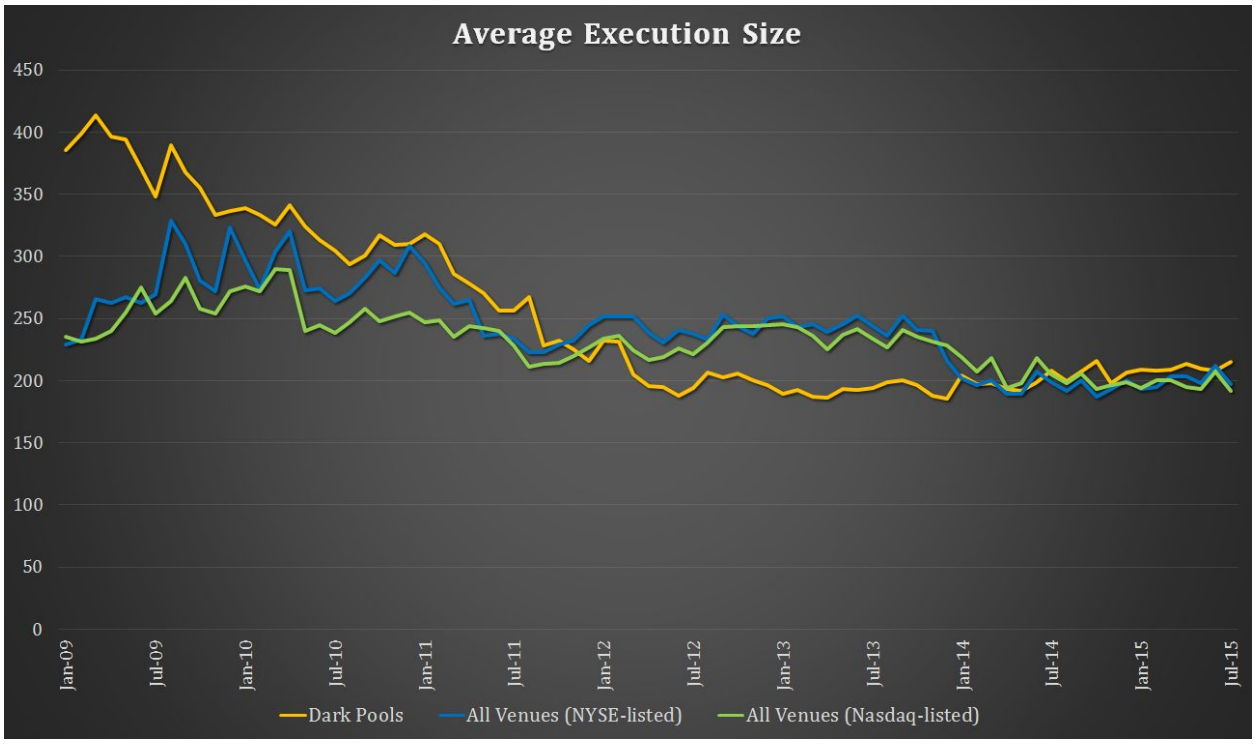

Figure 2: Average Trade Size Over Time. Rosenblatt Securities, Sept. 2015.

Some measures of quality also often went down. Adverse selection and toxicity – two common measures for information leakage and market impact – rose alongside fill rates.[10]

> *Brokers seem to have a strong preference to route to their own dark pools, but investors have to wonder at what cost.*

The feedback loop of large brokers routing orders to their own ATSs, often to be filled by high-speed traders, ensured that the biggest brokers had the most successful ATSs. As Figure 3 below shows, while the ATSs of many bulge bracket brokers in Q1 2015 were under 1% market share (except for Credit Suisse), most of them filled a disproportionate amount of orders in their own ATS (Goldman Sachs being a notable exception):

Figure 3: Fill Rates and Market Share

Broker	ATS Fill Rate - NYSE Names *Source: Rule 606 Filings*	ATS Fill Rate - Nasdaq Names *Source: Rule 606 Filings*	ATS Market Share *Source: FINRA ATS and BATS*	Trading Market Share *Source: Greenwich Associates*
Goldman Sachs	4%	9%	0.72%	8.70%
JP Morgan	15.5%	19%	0.64%	8.60%
BAML	6%	13%	0.73%	8.40%
Morgan Stanley	11%	15%	0.96%	8.20%
Credit Suisse	30%	34%	1.60%	6.90%

Brokers seem to have a strong preference to route to their own dark pools, but investors have to wonder at what cost. As evidence has mounted that dark pool operators have favored some participants over others—and execution quality has suffered as a result—regulators have begun to intervene.

[10] For example, a study of 28 dark pools utilized by one brokerage firm's smart order router found a relationship between increased fill rates and toxicity. George Sofianos and JuanJuan Xiang, *Dark Pool Races, Part Two*, Goldman Sachs, Street Smart, Issue 44 (2011). Notably, this study found that despite the rise in toxicity, the increased fill rates led to lower shortfalls, suggesting lower execution costs.

RECENT ENFORCEMENT ACTIONS

Prior to 2011, state and federal regulators had never brought any significant enforcement actions against any dark pools. The October 2011 enforcement action against Pipeline Trading Systems, LLC (Pipeline) and its principals ushered in a new era of regulatory oversight.

Over the past four years, regulators have settled actions against six dark pool operators, including:

- Pipeline,[11]
- eBX, LLC (LeveL),[12]
- Goldman Sachs,[13]
- Liquidnet,[14]
- UBS,[15] and
- ITG.[16]

In addition to these settled matters, it was reported in August 2015 that Credit Suisse and Barclays were in advanced discussions with the New York Attorney General and the SEC to settle allegations of wrongdoing in their respective dark pools.[17] Below, we examine the most significant of these regulatory actions: Pipeline, UBS, ITG, and, to the extent possible, Barclays and Credit Suisse.

PIPELINE

In October 2011, the SEC brought its first significant action against any dark pool when it settled a case against Pipeline and two of its principals.[18] The Pipeline case was remarkable in a number of respects, including that:

- it was the first significant case against a dark pool operator;
- the misconduct continued unchecked for several years until a whistleblower highlighted the problems to the SEC;
- the SEC narrowly focused on the quality of the dark pool's disclosures as the primary misconduct; and

[11] In the Matter of Pipeline Trading Systems LLC, Fred J. Federspiel, and Alfred R. Berkeley III, Exch. Act Rel. No. 34-65609 (Oct. 24, 2011).
[12] In the Matter of eBX, LLC, Exch. Act Rel. No. 34-67969 (Oct. 3, 2012) (regarding the operations of LeveL).
[13] In re Goldman Sachs Execution & Clearing, L.P., Letter of Acceptance, Waiver, and Consent, No. 20110307615-01, (Jun. 3, 2014), *available at* http://disciplinaryactions.finra.org/Search/ViewDocument/36604.
[14] In the Matter of Liquidnet, Inc., Exch. Act Rel. 34-72339 (June 4, 2014).
[15] In the Matter of UBS Securities LLC, Exch. Act. Rel. 34-74060 (Jan. 15, 2015).
[16] In the Matter of ITG, Inc. and AlterNet Securities, Inc., Exch. Act Rel. 34-75672 (Aug. 12, 2015).
[17] Bradley Hope, Emily Glazer, and Christopher M. Mathews, *Credit Suisse, Barclays in Talks to Settle 'Dark Pool' Allegations*, Wall St. Journal (Aug. 11, 2015). As discussed further below, the New York Attorney General filed suit against Barclays in June 2014.
[18] In the Matter of Pipeline Trading Systems LLC, Fred J. Federspiel, and Alfred R. Berkeley III, Exch. Act Rel. No. 34-65609 (Oct. 24, 2011) ("Pipeline Order").

- the SEC accepted a limited theory of disgorgement and modest penalties.

BACKGROUND

In 2004, the former President of the Nasdaq Stock Market opened Pipeline as a registered ATS based in New York City.[19] Pipeline fashioned and sold itself as a non-predatory "crossing network" for "naturals" to trade large blocks of shares without information "slippage."[20] Put simply, it was supposed to be a safe haven from statistical arbitrageurs and high frequency traders that prey on large orders.[21]

To distinguish itself from other dark pools that also housed a proprietary trading desk, Pipeline's sales force was instructed to tell customers that there was "no prop desk at Pipeline attempting to game your block orders."[22] To protect large institutional traders from having their orders sniffed out by firms executing at small sizes, Pipeline restricted trading to minimum block sizes of 10,000, 25,000, or 100,000 shares, depending upon the stock.[23] It also disciplined traders in its dark pool for what it viewed as abusive practices.[24]

Before it opened for trading in 2004, Pipeline's parent holding company formed an affiliated entity expressly intended "to '[p]rovide a baseline fill rate for early Pipeline adopters' by frequently placing orders and trading with Pipeline customers."[25] The affiliate, trading under multiple names over the years,[26] was tasked with taking the other side of its customers' orders to ensure that trades were executed in the dark pool. Pipeline's management hoped that this would attract more customers and more executions.

Pipeline's affiliate trading changed somewhat over time. At its most basic level, the affiliate's employees were notified when a stock's status changed in the pool, and were given other information they could use to guess the direction of customers' orders in the pool. The affiliate would then attempt to take the other side. Sometimes, the affiliate would seek to front-run orders by executing trades in the same direction at other market centers, and then flip the

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[19] Pipeline Order at 3.

[20] See Pipeline Order at 7-8 (quoting statements by the Pipeline parties:
- "[W]ith Pipeline, pre-trade leakage of critical information is eliminated. Pipeline gives block traders the ability to attract giant contras while frustrating the prying eyes of predators."
- According to Federspiel, "Traders [using Pipeline] experience the simplicity and speed of anonymously executing large blocks without moving the market. Relieved from predators and front runners, traders can quickly and quietly unearth block liquidity – generating more fills with less slippage."
- Pipeline was "a refuge from predators and front runners."
- According to Berkeley, Pipeline "acts as a confidential channel, specifically to bring natural buyers and sellers together . . . without disseminating their intentions.").

[21] For example, an August 17, 2009 press release quoted the company's CEO as saying "[o]ur mission is to help buy-side desks get all the liquidity they need while minimizing losses to high-frequency trading operations." Pipeline Order at 10.

[22] Pipeline Order at 10.

[23] Pipeline Order at 4-5.

[24] Pipeline Order at 13.

[25] Pipeline Order at 5 (quoting an email from Pipeline's Director of Research to both of its then-President and CEO).

[26] The Affiliate operated under the names Exchange Advantage LLC, Aurora Technology Partners LLC, and Milstream Strategy Group LLC. Pipeline Order at 5.

positions back to the resting customer orders. Although the affiliate was usually guessing the direction of the resting customer orders, it had more information with which to guess than did non-affiliates.

At times, the affiliate would lose money on its trades. Sometimes it would guess wrong. Other times, it would simply take the other side of customer orders, and subsequently attempt to flip out of these positions in a manner that limited its losses. In these situations, it rarely made money.

Still other times, the affiliate would front-run its own customers' orders and subsequently take the other side of their customers' resting orders. This approach was far more likely to be profitable.

Pipeline was well aware of its conflict of interest as the counterparty to its dark pool customers and took steps to mitigate it. For example, Pipeline attempted to mitigate its conflict of interest by paying its traders based on a formula that rewarded them for both trading profits and for providing higher-quality executions to their customers (so that profitability was not the only factor shaping execution practices).[27]

At first, from 2004-2006, Pipeline's affiliate lost $19.7 million on its trading.[28] These losses might be expected if it was simply taking the other side of its customers' orders, and then looking to subsequently unload the positions. These losses also suggest that Pipeline was, as a collective enterprise, providing relatively high quality executions. Then, things changed at Pipeline. After a few years, the company decided to shift its money-losing affiliate into a revenue generator. In 2007, the affiliate had almost no losses,[29] and from 2008-2010, its trading turned a profit of $32.2 million.[30]

Pipeline's affiliated trading desk wasn't a secret, nor was its involvement in the dark pool. In fact, Pipeline's subscription agreements with its customers generally included a notice that unspecified affiliates of Pipeline or its investors could be trading on the ATS.[31] However, the disclosures about the affiliate never detailed the its "role in providing liquidity on the ATS."[32]

The affiliate was an essential element to completing transactions in the dark pool. When Pipeline started its operations, its affiliate was participating in as much as 97.5% of the trades in its dark pool.[33] Although that rate declined over time, from its launch until the end of 2009, Pipeline's affiliate still participated in approximately 80% of the trades in its pool.[34]

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[27] Pipeline Order at 12.
[28] Id.
[29] Id.
[30] Id.
[31] Pipeline Order at 5.
[32] Id.
[33] Pipeline Order at 6.
[34] Id.

ENFORCEMENT ACTION

Pipeline's misconduct was ultimately discovered when a disgruntled former employee blew the whistle to the SEC.[35] The SEC settled the matter with Pipeline, its CEO, and its Chairman on October 24, 2011.

> *The SEC's action against Pipeline was not based on Pipeline's conscious decision, beginning in early 2008, to profit at its customers' expense.*

When outlining the basis for the case, the SEC's Director of Enforcement stated that "Pipeline and its senior executives [we]re being held to account because they misled their customers about how Pipeline's dark pool really worked."[36]

The SEC's action against Pipeline was not based on Pipeline's conscious decision, beginning in early 2008, to profit at its customers' expense. In fact, the settlement expressly noted, with no criticism, that "[s]ome operators of ATSs own proprietary trading desks that trade securities on their ATSs with the operators' own money."[37] In addition, instead of calculating damages according to the $32 million in profits obtained by the affiliate at its customers' expense from 2008-2010, the SEC expanded the settlement time horizon for the settlement to include the prior years when the affiliate lost money and even gave credit to the affiliate's operational expenses and executive compensation.

> *Instead of focusing on Pipeline's tangible, quantifiable harm to investors from 2008-2010, the SEC's action was built largely on Pipeline's inadequate disclosures about the critical role the affiliate played in the venue's operations and the advantages it had over other participants in the pool.*

[35] Scott Patterson and Jenny Strassburg, *Traders Navigate a Murky New World*, Wall St. Journal, (Apr. 9, 2012).
[36] Press Release, Sec. and Exch. Comm'n, Alternative Trading System Agrees to Settle Charges That It Failed to Disclose Trading by an Affiliate, Oct. 24, 2011 (quoting SEC Division of Enforcement Director Robert Khuzami).
[37] Pipeline Order at 10.

In this way, the settlement bizarrely gave credit to Pipeline for its affiliate's compensation to traders who were being paid in part from ill-gotten trading profits. These additional losses and operational expenses also had another important effect: they completely offset the ill-gotten trading profits from 2008-2010. Thus, the settlement required no disgorgement of unjust profits.

Instead of focusing on Pipeline's tangible, quantifiable harm to investors from 2008-2010, the SEC's action was built largely on Pipeline's inadequate disclosures about the critical role the affiliate played in the venue's operations and the advantages it had over other participants in the pool.[38] The settlement order is replete with dozens of allegedly misleading statements, regulatory filings, and interview quotes by Pipeline and its principals.[39] Again, this was despite the fact that Pipeline's customer agreements disclosed the existence of an affiliate with the capacity to trade in its dark pool.

While none of the defendants admitted any wrongdoing,[40] the settlement required the firm, its CEO, and its Chairman, to pay $1 million, $100,000, and $100,000, respectively.[41] Other than a standard "cease-and-desist" order, no further actions were taken against the firm or its associated individuals.

REACTION FROM MARKET PARTICIPANTS

Investors' reaction to the Pipeline case was dramatic. In spite of the fact that it replaced the key executives involved in the case (which included the former Nasdaq Stock Market President),[42] Pipeline's customers largely stopped sending orders to the venue, leading to its rapid collapse. Because of Pipeline's already low trading volume, it proved to be a relatively easy-to-replace trading venue.[43]

Perhaps because there was no disgorgement, many market participants and even legal experts appear to have been under the false impression that Pipeline had not abused investors for its

[38] In particular, the settlement order declared that Pipeline violated:

- Section 17(a)(2) of the Securities Act (which prohibits material misstatements or omissions in the offer or sale of securities);
- Rule 301(b)(2) of Regulation ATS (which governs disclosures of ATS operational changes); and
- Rule 301(b)(10) of Regulation ATS (which requires an ATS to establish adequate safeguards and procedures to protect subscribers' confidential information).

The settlement order further declared that Pipeline's CEO and Chairman both caused the 17(a)(2) and 301(b)(10) violations, and had liability pursuant to Sections 15(b)(6) and 21B(a)(3) of the Exchange Act, for Pipeline's violations of Rule 301(b)(2) of Regulation ATS. Pipeline Order at 16-17.

[39] *See, e.g.*, Pipeline Order at 7-10.
[40] Pipeline Order at 1.
[41] Pipeline Order at 17-18.
[42] Scott Patterson and Jenny Strassburg, *Pipeline Financial's Top Officers Leave in Wake of 'Dark Pool' Case*, Wall St. Journal, Nov. 15, 2011.
[43] Brokers are generally obligated to route orders to venues likely to provide the best executions. A trading venue with a greater volume of orders and executions could be a source of liquidity that traders may thus feel compelled to tap into for the benefit of their customers—even if they have reservations about the venue's operations and transparency.

own profits. In fact, no investors pursued significant legal action against Pipeline following the SEC settlement.[44]

> *"This type of thing speaks to the actions of particular individuals and firms rather than the industry more broadly. … Block-crossing is an area that has conducted itself pretty well because it's client-focused by design."*
>
> Jamie Selway, Head of Liquidity Management, ITG (October 25, 2011)

At the time, several well-known market structure experts were shocked by Pipeline's conduct.[45] Many argued that Pipeline was an outlier, whose misconduct was evidence of a few bad apples. For example, in a now ironic comment, the head of liquidity management at ITG (which has recently paid a record-setting penalty for its own dark pool abuses) opined at the time that "[t]his type of thing speaks to the actions of particular individuals and firms rather than the industry more broadly. … Block-crossing is an area that has conducted itself pretty well because it's client-focused by design."[46]

[44] There are many potential reasons why investors chose to not bring any actions against Pipeline, including that: (i) any damages could be difficult to quantify, (ii) damages would likely be low due to Pipeline's relatively low volume of trading, and (iii) the likelihood of recovery, even if an investor won an action, was presumably low.
[45] Joshua Gallu, Nina Mehta, and Nick Baker, *Pipeline Settles with U.S. SEC Over Dark Pool Claims*, Bloomberg, Oct. 24, 2011 (quoting Larry Tabb, founder of Tabb Group, LLC as finding it "shocking" and quoting Justin Schack, managing director for market structure at Rosenblatt Securities as "amazed and shocked.").
[46] Jacob Bunge, *'Dark Pool' Settlement Shines Light on Potential Abuses*, Wall St. Journal, Oct. 25, 2011 (quoting Jamie Selway). Selway is both the head of liquidity management for ITG and a Board Member for BATS Exchange. See http://www.bloomberg.com/research/stocks/people/person.asp?personId=109696070&ticker=ITG.

UBS

The next significant dark pool case brought by the SEC was against UBS.[47] UBS's dark pool, unlike Pipeline's, was one of the largest. The UBS settlement was – for about seven months – the largest ever involving a dark pool.

The UBS settlement was notable in a number of respects, including that:

- it was the first case against a major dark pool operator;
- UBS ATS gained significant, unfair competitive advantages over other trading venues by accepting sub-penny orders, in blatant violation of Regulation NMS;
- UBS allowed over 100 people to unnecessarily have access to its customers' confidential order information;
- UBS selectively marketed a complex order type to high-speed traders while also secretly permitting its own order routing customers to avoid interacting with high-speed traders; and
- the SEC again accepted limited theories of disgorgement and penalties.

BACKGROUND

UBS Securities LLC (UBS)[48] has operated UBS ATS, a New York-based dark pool, since 2008.[49] Prior to the settlement, according to the SEC, UBS ATS was the largest equity ATS in the United States.[50]

Beginning in May 2008, and continuing for nearly three years, UBS ATS accepted and gave preferential treatment to hundreds of millions of orders priced with increments of less than one cent ("sub-penny orders").[51] Rule 612 of Regulation NMS expressly prohibits ATSs like the UBS

[47] The SEC also settled an action against Liquidnet Holdings, operator of the Liquidnet dark pool in June 2014 for "allow[ing] a business unit outside the dark pool operation to access the confidential trading data." Press Release, Sec. and Exch. Comm'n, SEC Charges New York-Based Dark Pool Operator With Failing to Safeguard Confidential Trading Information, June 6, 2014. Unlike the other matters discussed, there were no allegations or facts suggesting that the misconduct resulted in harm to investors. Rather, the misuse of information stemmed from another Liquidnet business unit utilizing customers' trading information for its own marketing purposes, and not for any trading advantages for itself or others. That said, Liquidnet settled for $2 million (double Pipeline's settlement), and the order detailed the same three substantive violations as were found in the Pipeline action. In the Matter of Liquidnet, Inc., Exch. Act Rel. 34-72339 (June 4, 2014) ("Liquidnet Order"). In addition, as described later, the New York Attorney General also filed a lawsuit against Barclays in July 2014. That matter is reportedly close to settlement. Lastly, the SEC settled allegations in October 2012 that the operator of LeveL had, amongst other transgressions, allowed the technology service provider who managed the dark pool to use customer information from the pool for the service providers' separate order routing business. The dark pool subscribers' confidential order information was used by the service provider for its routing business from 2008 through early 2011, when an SEC examination identified the misconduct. It is unclear whether any investors were harmed, or if so, how any damages might be calculated. Instead, the settlement simply imposes a penalty of $800,000. In the Matter of eBX, LLC, Exch. Act Rel. No. 34-67969 (Oct. 3, 2012)

[48] UBS Securities LLC is a New York-based, indirectly wholly-owned subsidiary of UBS AG. UBS Securities LLC, Notes to the Statement of Financial Condition, Dec. 31, 2014.

[49] In the Matter of UBS Securities LLC, Exch. Act. Rel. 34-74060, at 4 (Jan. 15, 2015) ("UBS Order").

[50] UBS Order at 2.

[51] UBS Order at 2-3.

ATS from accepting sub-penny orders. The rule is intended to prevent market participants from jumping to the top of the order book by offering immaterial price improvement.[52]

While some of these sub-penny orders were accepted due to technical issues, others were as a result of two custom-designed order types, one of which was operational from 2008-2010, and the other, from 2010-2011.[53] Between the two order types and the two technical issues, UBS ATS ended up accepting and prioritizing hundreds of millions of sub-penny orders, granting UBS a significant competitive advantage over other trading venues that complied with the SEC's rules.[54]

UBS didn't tell all of its subscribers about the complex order types that resulted in sub-penny orders.[55] Instead, it marketed the order types nearly exclusively to high frequency traders and market makers.[56] UBS ATS ultimately "decommissioned" both order types, although the second order type was shut down only after the SEC examination staff expressed concerns with it.[57]

Another issue involved a mechanism developed by UBS to enable its algorithmic trading customers to avoid being "picked off" by high frequency traders and market makers in its dark pool. To implement this protection, UBS first used its own quantitative analytics to categorize users of its dark pool as either "natural" or "non-natural."[58] UBS then enabled its algorithmic program customers to avoid interacting with "non-natural" firms.[59]

But rather than make the feature widely available, UBS declined to inform everyone in its pool, instead making it available to only users of UBS's trading algorithms.[60] In addition, UBS didn't tell some of the firms that it had designated as "non-natural" that they were being prevented from interacting with other orders in the pool.[61]

A third issue involved confidentiality. While ATSs are required to keep their customers' information confidential, UBS gave more than 100 employees who had no role in the operation or compliance of the dark pool full access to the pool's order book.[62]

[52] See Exch. Act Rel. No. 34-51808, at 219 (June 9, 2005).
[53] UBS Order at 2-3.
[54] UBS Order at 3.
[55] Id.
[56] Id.
[57] UBS Order at 8. It is unclear why the other order type was "decommissioned" in 2010.
[58] UBS Order at 10.
[59] Id.
[60] UBS Order at 3.
[61] UBS Order at 10.
[62] UBS Order at 13.

ENFORCEMENT ACTION

On January 15, 2015, UBS settled an enforcement action with the SEC regarding its dark pool.[63] In announcing the settlement, the SEC's Director of the Division of Enforcement explained that "[t]he UBS dark pool was not a level playing field for all customers and did not operate as advertised."[64]

As with Pipeline, the SEC's action focused primarily on the inadequacy of UBS's disclosures about how UBS ATS operated and its SEC filings.[65] As stated in the settlement, "UBS violated [the law] by failing to disclose PPP to all UBS ATS subscribers … [and] by failing to provide all UBS ATS subscribers with notice of a feature that could prevent an order from executing in the ATS against orders from subscribers whose flow was designated as 'non-natural,' typically market makers and/or HFT firms."[66]

Unlike the Pipeline settlement, however, the SEC settlement also included a substantive violation of Rule 612's prohibition against sub-penny orders, numerous books and records violations, and a violation of the fair access requirements (since UBS ATS had such significant trading volume that it triggered these requirements).[67]

The SEC's treatment of the Rule 612 violation is particularly interesting. The settlement expressly:

- acknowledges that the purpose of Rule 612 was to "deter the practice of stepping ahead of exposed trading interest by an economically insignificant amount;"[68]
- details how UBS designed and marketed order types to high frequency traders that plainly violate Rule 612's unambiguous prohibition against sub-penny quotes;
- explains that one of the abusive order types "facilitated the very result that Rule 612 was designed to prevent: it allowed one subscriber to gain execution priority over another in the order queue by offering to pay an economically insignificant sub-penny more per share;"[69] and
- acknowledges that by allowing for sub-penny orders, UBS gained a competitive advantage for executions over other ATSs and exchanges that complied with Rule 612.

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[63] The very same week that the UBS settlement was announced, the SEC also settled an enforcement action against BATS Global Markets for failure to accurately disclose how custom-designed complex order types used on EDGA Exchange and EDGX Exchange (formerly owned by Direct Edge Holdings) worked. At the time, it was the single largest penalty against a securities exchange. Press Release, Sec. and Exch. Comm'n, SEC Charges Direct Edge Exchanges With Failing to Properly Describe Order Types, Jan. 12, 2015.
[64] Press Release, Sec. and Exch. Comm'n, SEC Charges UBS Subsidiary With Disclosure Violations and Other Regulatory Failures in Operating Dark Pool, Jan. 15, 2015.
[65] UBS Order at 2-4, 14-15.
[66] UBS Order at 3.
[67] UBS Order at 2-4, 14-15. The UBS settlement also included a violation for UBS's grant of access to customers' trading information to over 100 people (mostly IT personnel) who had no role in the operations or oversight of UBS ATS. UBS Order at 13.
[68] UBS Order at 4 (quoting Exch. Act Rel. No. 34-51808, at 219 (June 9, 2005)).
[69] UBS Order at 5.

> UBS was—for several years—able to accept more orders, and very likely enjoyed far more executions, than it would have otherwise. In fact, this mechanism may have helped propel the UBS ATS and its algorithmic trading desks to the top of the industry.

However, despite this extensive discussion of UBS ATS's repeated Rule 612 violations, the settlement does not quantify the losses suffered by other trading venues as a result of its illegal acceptance of sub-penny orders. The settlement also fails to quantify the losses suffered by investors whose orders were exposed to "non-natural" participants in the dark pool. In fact, rather than any detailed analysis about UBS's gains, or the losses suffered by exchanges, ATSs or investors as a result of UBS's misconduct, the settlement simply lists a "disgorgement" amount of approximately $2.24 million, interest of another $235,000, and a penalty of $12 million.[70]

In accepting the 2015 settlement, UBS neither admitted nor denied the findings in the order, and no actions have yet been brought against any individuals at the firm.

REACTION FROM MARKET PARTICIPANTS

Market reaction to the UBS settlement was nearly non-existent. As can be seen in the chart below, UBS market share (the grey line) stayed constant until increasing significantly in April 2015 and briefly taking the top spot in the ATS rankings, as shown in Figure 4.

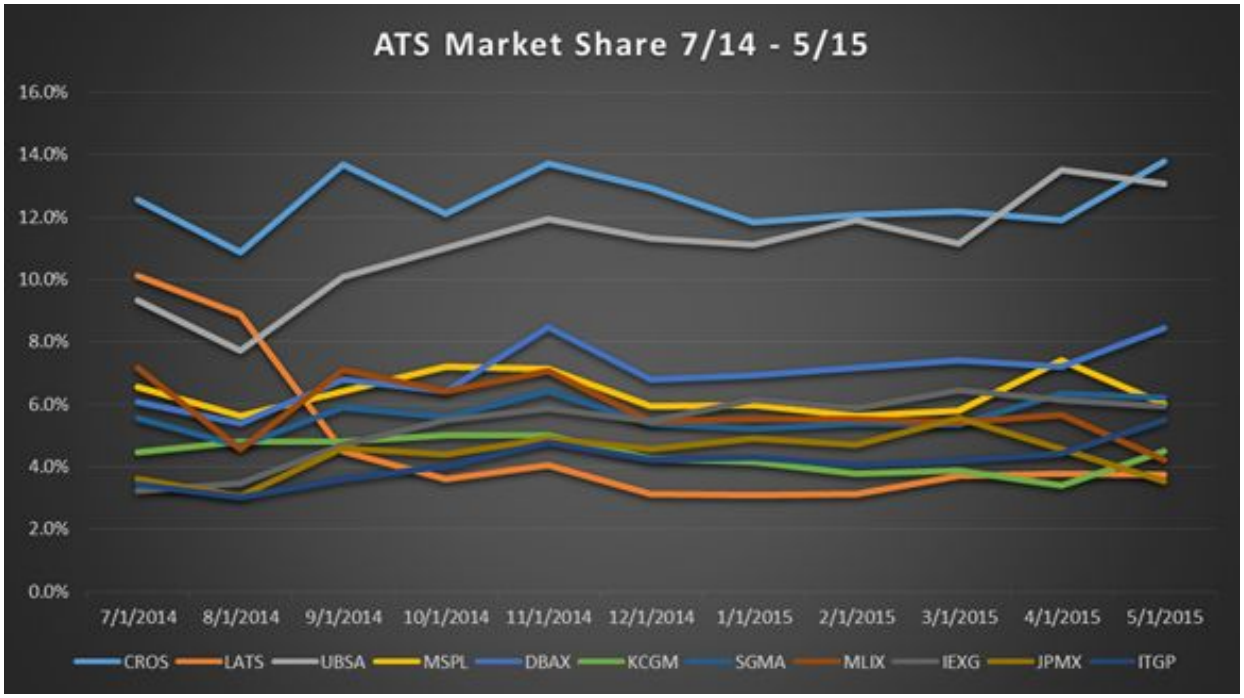

Figure 4: ATS Market Share since July 2014. FINRA ATS Data..

[70] UBS Order at 15.

Thus, although UBS paid the single largest penalty up to that date for dark pool abuses, and those abuses involved hidden mechanisms that secretly favored some traders over others, it appears to have had no appreciable impact on investors' or brokers' decisions to use the pool, in marked contrast to Barclays LX (LATS on the graph above).

ITG

Seven months after the UBS settlement, the SEC broke its dark pool settlement record yet again with ITG, one of the oldest dark pool operators in the US. For those who observed the details of the Pipeline case, ITG's conduct will be familiar. ITG operated a proprietary trading desk with privileged access to information about resting orders in its dark pool, and it used that desk to profit at its customers' expense.

BACKGROUND

ITG, Inc. and its affiliate, AlterNet Securities, Inc., (collectively, "ITG") are subsidiaries of Investment Technology Group, Inc., a New York-based, publicly traded company. ITG provides its customers with trading algorithms and smart order routers, which are used to route orders to numerous venues for execution, including to ITG's own dark pool, POSIT.[71] ITG has operated POSIT since 1987, making it one of the oldest ATSs.[72] POSIT's subscribers include asset managers, brokers, and institutional investors.[73]

As of Q1 2015, POSIT was the ninth largest ATS in the US by trade volume.[74] ITG has historically operated and marketed itself—and has a reputation—as an independent "agency-only" brokerage firm.[75] In other words, ITG's primary business has been providing brokerage services, including POSIT access, to investors.[76]

ITG has been considered by many market participants and regulators to be a "thought leader" in dark pool regulation. In recent years, ITG's executives have repeatedly testified before Congress and regulators on how trading venues should be regulated.[77] Most recently, the head of ITG's liquidity management spoke at the first meeting of the SEC's Equity Market Structure

[71] ITG Order at 2.
[72] ITG Order at 2.
[73] ITG Order at 4-5.
[74] ITG Order at 2.
[75] ITG Order at 4.
[76] Id.
[77] *See, e.g.*, Computerized Trading Venues: What Should the Rules of the Road Be?, Before the Subcomm. On Securities, Insurance, and Investment of the Senate Comm. on Banking, Housing, and Urban Affairs, (2012) (Statement of Robert Gasser); Dark Pools, Flash Orders, High Frequency Trading, and Other Market Structure Issues, Before the Subcomm. On Securities, Insurance, and Investment of the Senate Comm. on Banking, Housing, and Urban Affairs, (2009) (Statement of Robert Gasser).

Advisory Committee[78]—an Advisory Committee that includes ITG's Chairman among its members.[79]

Facts now show that nearly six years earlier, in late 2009, ITG executives had begun to explore ways to generate more revenue at the expense of their customers'.[80] Thereafter, at the recommendation of senior management, the Board approved ITG's establishment of an undisclosed proprietary trading desk.[81] According to the settlement, the desk was intended to be a small trial run. If the desk proved to be successful, then ITG would ostensibly expand its operations and, at that time, notify its customers, POSIT subscribers, and the SEC.[82]

The firm tasked its head of liquidity management to run the desk. This officer already had "responsibility for all of ITG's electronic brokerage products, including its entire suite of trading algorithms, its smart order routers, and for the POSIT dark pool."[83] The team he assembled to work on the desk included technology employees with extensive experience developing and managing ITG's order routing products.[84]

According to the settlement, ITG executives were concerned that its reputation with its customers and POSIT subscribers would be damaged if they learned about this new desk.[85] So ITG never informed its customers, the SEC, or even its own sales force.[86]

In April 2010, the desk, which was dubbed "Project Omega," began operations for a two-week test period.[87] After a temporary halt to analyze the data and refine its strategies, the secret trading desk resumed trading in June.[88]

The secret trading desk was designed to trade only against "sell-side" customers, a feature that no other subscriber to POSIT was able to enjoy.[89] ITG's compliance department also articulated a number of restrictions for the desk, most notably that it:

- was not to have more than $500,000 in positions at any given time;[90]
- could "not have access to information regarding ITG (including POSIT) and/or AlterNet buy-side or sell-side customer order flow;"[91] and

[78] Equity Market Structure Advisory Committee, Sec. and Exch. Comm'n, May 13, 2015, (Statement of Jamie Selway).
[79] For the past eight years, the Chairman of its Board has been a prominent Cornell University professor who wrote a leading book on market microstructure and also sits on the Board of Trustees for TIAA-CREF. See ITG, Inc., Board of Directors, *available at* http://www.itg.com/about-itg/board-of-directors/.
[80] ITG Order at 5.
[81] Id.
[82] ITG Order at 6.
[83] ITG Order at 5.
[84] ITG Order at 6.
[85] ITG Order at 6.
[86] Id.
[87] ITG Order at 7.
[88] Id.
[89] ITG Order at 10.
[90] ITG Order at 7.
[91] Id.

- "may not coordinate trading strategies or share order flow and/or execution information" with other ITG employees.[92]

Despite these restrictions from the Compliance Department, ITG's secret trading desk had access to, and used, two distinct sets of confidential data feeds. The first feed contained real-time information regarding "sell-side" customer orders using eleven of ITG's algorithmic trading programs.[93] This feed, which was not provided to any other POSIT subscribers, included: "(a) client identifier, (b) symbol, (c) side, (d) quantity of shares, (e) filled shares, (d) target price, (e) the ITG algorithm in which the order was located, and (f) time parameters."[94]

With this feed, ITG's secret trading desk engaged in what a lay-person might think of as classic front-running trades—euphemistically referred to as the "Facilitation Strategy."[95] The secret trading desk saw orders that were willing to "cross the spread," engaged in trades at other market venues in the same directions as those orders, and then executed trades opposite ITG's customers' orders in POSIT—thus capturing the entire spread.[96] ITG's secret desk ultimately traded ahead of, and then against, POSIT subscribers to the tune of 262 million shares.[97]

ITG's secret trading desk also used a feed that tapped into ITG's order routing and execution management system to get real-time information about ITG's "buy-side" and "sell-side" customers' order routing and fills at POSIT and other market venues.[98] Seeing these executions enabled ITG to deduce when and where trades could happen at the midpoint of the spread.[99] ITG's trading desk could then place orders in the displayed markets and offsetting orders in another venue that it inferred would execute at the midpoint of the spread. If both executed, the desk would capture half the spread.[100]

The secret trading desk's activities continued unabated until early December 2010. This was when ITG's CEO learned that the trading desk had—in violation of the Compliance Department conditions—accessed and made use of ITG's customer and POSIT's subscriber information through the feeds. The desks' trading was stopped.[101] The head of the desk was reprimanded.[102]

A few days later, the secret desk resumed trading—only this time without the two feeds.[103] Nevertheless, the secret desk still had access to information about ITG's order routing systems

[92] Id.
[93] ITG Order at 9.
[94] Id.
[95] Id. Interestingly, the settlement does not refer to these trades as "front-running."
[96] ITG Order at 9-10.
[97] ITG Order at 13.
[98] ITG Order at 11.
[99] Id.
[100] ITG Order at 11.
[101] ITG Order at 12.
[102] Id.
[103] ITG Order at 13.

and algorithms, as well as access to some confidential customer and POSIT subscriber information.[104]

Trading then continued until mid-July 2011, when ITG fired the desk head and dismantled the trading desk.[105] Over the course of its existence, ITG's secret trading desk traded 1.3 billion shares, and earned profits of approximately $2.1 million.[106]

ENFORCEMENT ACTION

On August 12, 2015, ITG, Inc. and its affiliate, AlterNet Securities, Inc., settled an enforcement action with the SEC over the operation of its dark pool. This action resulted in an $18 million penalty, the largest ever paid by a dark pool, eclipsing the mark set just seven months prior by the UBS case.

> *The SEC fashioned ITG's creation of a secret trading desk and abuse of its customers as simply another case of "inadequate disclosures."*

In announcing the ITG settlement, the SEC's Director of Enforcement explained that "ITG created a secret trading desk and misused highly confidential customer order and trading information for its own benefit."[107] Thus, for the first time, the SEC appears to have focused on the nature of the abuse in question, not just on a disclosure failure. Despite that lofty rhetoric, however, the charges ultimately leveled against ITG look eerily similar to those of its predecessor cases. The settlement order describes ITG's violations as follows:

- ITG Failed to Disclose Project Omega or its Proprietary Trading Activities;[108]
- ITG Failed to Restrict Access to POSIT Subscriber Information;[109] and
- ITG Failed to Amend its Form ATS Filings.[110]

The SEC fashioned ITG's creation of a secret trading desk and abuse of its customers as simply another case of "inadequate disclosures." The settlement never discusses how ITG's customers and POSIT subscribers were harmed by ITG's misconduct. Nor does it make any attempt to qualitatively or quantitatively determine the extent of their injuries. Instead, the settlement

[104] Id.
[105] Id.
[106] Id.
[107] Press Release, Sec. and Exch. Comm'n, SEC Charges ITG With Operating Secret Trading Desk and Misusing Dark Pool Subscriber Trading Information, Aug. 12, 2015.
[108] ITG Order at 13-14.
[109] ITG Order at 14.
[110] Id.

simply declares that ITG's secret trading desk made approximately $2.1 million in profits and orders "disgorgement" of that amount plus interest and a civil penalty of $18 million.[111]

In sharp contrast to the Pipeline and UBS cases, ITG admitted to the facts in the settlement order and to violating federal securities laws.[112] To date, no actions have been brought against any individuals at the firm, although the SEC declared that the investigation is "continuing."[113]

REACTION FROM MARKET PARTICIPANTS

The reaction to the ITG settlement has been dramatic. ITG's parent, Investment Technology Group, Inc., has lost about 40% of its market capitalization since its July 2015 high.[114]

As for trading through ITG and on POSIT, the decline has also been dramatic. ITG averaged 157MM shares traded per week[115] for the weeks of July 6th through July 27th, 2015. The news was first announced on July 29th, and the next week trading declined to less than 97MM shares.[116] However, the full extent of the transgression was not known until the middle of the next week when the SEC order was released. That week—August 10, 2015—the total was 78MM shares[117], a decline of over 50%. The week that followed yielded a total of 82M shares.[118] As of now, the ongoing viability of ITG is in question.

Importantly, ITG provides numerous services to its customers, from order routing and management to data and analytics. Thus, while POSIT may at least temporarily suffer from significant lost trading volume, it is unclear to what extent market participants will search for other service providers. Further, because of ITG's nearly 30 years of operating POSIT and its historically favorable reputation, ITG may be able to convince market participants to continue to use its services. This effort may be aided by the fact that ITG:

- fired the head of the secret trading desk and shut it down over three years ago;
- fired its CEO and General Counsel; and
- still enjoys, for the moment, significant trading volumes that may compel brokers and other market participants to continue to connect to it as a potential source of liquidity.

A number of factors involved in this case raise significant questions about ITG's culture and the judgment of its executives and Board, particularly in light of the fact that the Board expressly authorized the creation of the secret trading desk and hid its existence from customers and

[111] ITG Order at 16.
[112] ITG Order at 1.
[113] Press Release, Sec. and Exch. Comm'n, SEC Charges ITG With Operating Secret Trading Desk and Misusing Dark Pool Subscriber Trading Information, Aug. 12, 2015.
[114] See http://finance.yahoo.com/echarts?s=ITG+Interactive#{"range":"3mo","allowChartStacking":true} (reflecting a July 2015 high of 27.13 and close of 15.62 in August).
[115] FINRA ATS Data, *available at* http://ats.finra.org.
[116] Id.
[117] Id.
[118] Id.

regulators. The long-term ramifications of this settlement for ITG remain undetermined, and will likely be far-better understood by the end of 2015.[119]

OTHER REGULATORY ACTIONS - BARCLAYS AND CREDIT SUISSE

New York Attorney General (NYAG) Eric Schneiderman has expressed increasing interest in policing the capital markets, and delving more deeply into issues surrounding market structure and algorithmic trading in particular. The unique powers of the Martin Act provides his office with powerful tools with which to do so.[120] In June 2014, the NYAG filed his first major dark pool suit against Barclays PLC (Barclays). This marked the very first public regulatory action against a major dark pool. Barclays, which sells brokerage services, including trading algorithms and smart order routers, also runs a dark pool. At its core, the case involves allegations that, following a 2011 decision to dramatically expand its dark pool operations,

> Barclays [made] a series of false statements to clients and the investing public about how, and for whose benefit, Barclays operates its dark pool. In short, contrary to Barclays' representations that it implemented special safeguards to protect clients from "aggressive," "predatory," or "toxic" high frequency traders, Barclays has operated its dark pool to favor high frequency traders. Barclays has actively sought to attract such traders to its dark pool, and it has given them advantages over others trading in the pool.[121]

Barclays is also alleged to have its order routing algorithms consistently favor its own dark pool, where it knew that the orders were exposed to the same "aggressive or predatory high-frequency traders" that it was purportedly protecting investors from.[122]

In July 2014, UBS AG, Deutsche Bank AG, and Credit Suisse AG (Credit Suisse) all announced that they were being investigated by US regulators regarding the operations of their dark pools.[123] To date, only the UBS case has been publicly resolved, leading many to speculate about the status of the other two cases. Then, on August 11, 2015, it was reported that both Barclays and

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[119] Ryan Hoerger, Sam Mamudi, and Matt Robinson, *ITG Faces Fight for Reputation Amid Fallout From Dark-Pool Probe*, Bloomberg, (Aug. 5, 2012).
[120] N.Y. Gen. Bus. Law Article 23-A. The Martin Act, which was first adopted in 1921, vests the Attorney General for the State of New York "broad law-enforcement powers to conduct investigations of suspected fraud in the offer, sale or purchase of securities." New York State Attorney General, *available at* http://www.ag.ny.gov/bureau/investor-protection-bureau. In particular, the Martin Act allows for State to bring actions without the burdens of establishing intent, reliance, or customer damages. For a brief primer on the Martin Act, please see Enforcement Proceedings Under New York's Martin Act. Harold Gordon, Practical Law Journal, (2015), *available at* http://www.jonesday.com/files/Publication/cc6cfc9e-1517-4707-958d-8ea80d2042c2/Presentation/PublicationAttachment/9be275fc-e882-499c-9045-9a429519ab82/FebMar15_%20NYSupplement_MartinActFeature.pdf.
[121] Complaint at 2-3, People of the State of New York v. Barclays Capital, Inc. and Barclays PLC, (Jun. 24, 2015). The NYAG later expanded his complaint to include allegations that Barclays had lied in its court filings and that it had failed to make two of its senior trading executives available in response to a subpoena. William Alden, *New York Attorney General Adds to Lawsuit Over Barclays Dark Pool*, N.Y. Times, (Jan 21, 2015).
[122] Complaint at 3, People of the State of New York v. Barclays Capital, Inc. and Barclays PLC, (Jun. 24, 2015) (noting that Barclays's claims that its routers were unbiased in their venue selection).
[123] Neil Maclucas, *Credit Suisse Dragged Into Dark-Pools Trading Probe*, Wall St. Journal, (Jul. 31, 2014).

Credit Suisse were in advanced discussions with the New York Attorney General and the SEC to settle claims arising from their respective dark pools.[124] These settlements were reported to be even larger than the last, with the settlement against Credit Suisse expected to be in the high "tens of millions."[125]

WHAT INVESTORS SHOULD LEARN FROM THESE CASES

From October 2011 through August 31, 2015, the SEC, Financial Industry Regulatory Authority (FINRA), and NYAG collectively brought actions against a half dozen dark pools, with more actions likely on the way. Several lessons have emerged from these cases:

ANY VENUE MAY ENGAGE IN MISCONDUCT

The dark pools that have already settled legal actions include some of the oldest, most well-respected, and largest dark pools in the country. Contrary to the wishful thinking of many in 2011, we now know that misconduct in dark pools has not been confined to a few fringe actors. Some of the most-prominent individuals in the industry have been involved. Dark pools that have been subject to regulatory actions have been overseen by a former President of Nasdaq Stock Market, a leading academic and fund board member, and longtime industry veterans.

> *If reportedly imminent actions are taken into account, then between November 2014 and August 2015, over 79 billion shares traded on dark pools that were violating the law.*

Some of the dark pools involved are also the biggest. If reportedly imminent actions are taken into account, then between November 2014 and August 2015, over 79 billion shares[126] traded on dark pools that were violating the law. This represents 43% of all ATS trading over that time period.[127]

[124] Bradley Hope, Emily Glazer, and Christopher M. Mathews, *Credit Suisse, Barclays in Talks to Settle 'Dark Pool' Allegations*, Wall St. Journal, (Aug. 11, 2015).
[125] Id.
[126] FINRA ATS Data, *available at* http://ats.finra.org.
[127] Id..

MISCONDUCT MAY REMAIN UNDETECTED AND CONTINUE FOR YEARS

Misconduct within a dark pool may continue for years without detection. In the Pipeline case, the misconduct continued from 2004 until after a whistleblower finally alerted the SEC more than 5 years later. The proprietary trading desk was part of Pipeline's plan for how its venue would execute orders from the start. Yet, neither the SEC nor any other regulator detected the scheme during the course of its operations, even after the trading desk changed its strategy in order to more directly take advantage of its customers' orders.

Similarly, UBS's misconduct started with its dark pool in 2008 and continued for years. Again, even as the SEC reviewed its regulatory filings and ATS operations, it failed to detect UBS's blatant violations of Rule 612 despite the passage of several years. Nor was the SEC aware of the fact that over 100 UBS employees had access to UBS ATS's order book for no apparent reason.

Given how long the dark pools' misconduct in these cases persisted, we must conclude that the information available to customers, the public, and regulators is insufficient to detect wrongdoing.

EVEN WHEN UNCOVERED IT CAN TAKE YEARS TO LEARN OF MISCONDUCT

In each of these actions brought to date, regulators first learned of the conduct years before it was disclosed to market participants and the public. In UBS, for example, an SEC examination team expressed concerns with one of its order types that allowed for sub-penny orders in early 2011, and yet the details were not made public until early 2015—leaving market participants in the dark about wrongdoing by one of the country's critical trading venues. Similarly, for Credit Suisse and Deutsche Bank, regulatory investigations were disclosed over a year ago, but investors and brokers know next-to-nothing about any of the substantive concerns with those venues. Thus, even if regulators are able to identify misconduct, it is unclear when investors and other market participants may learn about it.

MISCONDUCT MAY PROFOUNDLY IMPACT MARKET PARTICIPANTS

The breadth of misconduct uncovered to date has ranged from violations of books and records to using customers' confidential trading information against them. ATS's have an obligation to protect their customers' information. But how can an investor or broker know whether its information is, in fact, being protected? To reiterate, UBS allowed over 100 of its employees to gain access to customer information for no apparent reason.

The ability of investors or brokers to identify misconduct or quantify damage inflicted upon them is extremely limited without comprehensive data.

In Pipeline and ITG, proprietary trading desks took the other side of their customers' orders. Pipeline and ITG operated trading desks that, at times, acted as the very predators who investors were seeking to avoid by going into the dark pool in the first place. Even worse, at times, these desks would front-run their customers' orders at other trading venues and then flip the positions back to their customers—capturing illicit profits at the expense of those customers. The ability of investors or brokers to identify misconduct or quantify damage inflicted upon them is extremely limited without comprehensive data.

REGULATORS ARE FOCUSED ON DISCLOSURE - NOT SUBSTANTIVE PROTECTION

The dark pool cases to date demonstrate that regulators (and the SEC in particular) are focused on treating dark pool abuses as predicated largely on inadequate disclosures, filing violations, and books and records violations, rather than on unfair practices. Their approach suggests that if a firm disclosed that it had an algorithmic trading desk in its own dark pool, then the SEC might not bring a case.

For example, in the Pipeline case, the settlement expressly acknowledged that "[s]ome operators of ATSs own proprietary trading desks that trade securities on their ATSs with the operators' own money."[128] At the same time, the settlement documents detail that "Pipeline's senior management recognized that there could be 'a direct conflict of interest' between the Affiliate and a customer whose order it was seeking to fill. In any given trade, the better the price the customer received, the worse the price the Affiliate received, and vice versa."[129]

But while the SEC seems to appreciate the conflict of interest, it also appears to give credit to Pipeline for establishing a compensation system that included not just the trading profitability of its trading desk, but also its customers' execution quality. Yet the SEC found those efforts to be inadequate. Thus, while there was a clear conflict of interest—Pipeline's customers were on the losing end of a zero-sum game—the SEC didn't bring any action for violations relating thereto. Instead, the action was classified as a failure to disclose the extent of the role the trading desk played in the executions.

[128] Pipeline Order at 10.
[129] Pipeline Order at 11.

The settlement says that the trading desk averaged 80% of the dark pool's executions, and at some points accounted for as much as 97.5%. Still, one could easily read the settlement as suggesting that if Pipeline had added a one-sentence disclosure to its agreement indicating that its trading desk "played a significant role in providing liquidity to the dark pool," then there might not have been any case at all.

> *An operator of a dark pool that also operates a trading desk in the dark pool has an inherent conflict of interest: it has an incentive to trade against its customers for a profit.*

An operator of a dark pool that also operates a trading desk in the dark pool has an inherent conflict of interest: it has an incentive to trade against its customers for a profit. It is difficult to see how that conflict is cured simply by the vague disclosure of its existence. This conflict of interest may be exacerbated when an operator of a dark pool also operates order routing algorithms, which may exhibit bias towards the affiliated dark pool, to the detriment of a customer. Unfortunately, while observing this conflict of interest, the enforcement actions to date have not substantively addressed it.

REGULATORS ARE CATCHING UP

Regulators seem to be ratcheting up the financial penalties imposed upon violators, even as actions against individuals have been rare. Since the beginning of this year alone, regulators have settled two landmark dark pool cases and another landmark case against an exchange for abusive order types. Regulators are reportedly in talks to settle at least two more significant cases in the near future.

One of the significant challenges regulators face, however, is a lack of critical data, technological resources, and analytical capabilities. As discussed below, despite being proposed over five years ago, the Consolidated Audit Trail is not yet being built, and the SEC's Market Information Data Analytics System (MIDAS) has numerous significant data gaps. Additionally, the SEC currently lacks sufficient analytical resources with which to make use of comprehensive data, if collected.[130]

[130] We note that, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act created a "Securities and Exchange Commission Reserve Fund" that was intended to be spent on the Commission's priorities, including upgrades to the Commission's technology systems and resources. For FY 2012-2014, the SEC spent some of these unappropriated funds on various information technology (IT) projects, although it is unclear to what extent these resources have enhanced, if at all, the capabilities of the SEC to monitor trading and detect abuses. For more information on the SEC's use of the Reserve Fund for IT projects, please see the SEC Inspector General's July 6, 2015 management letter. Letter from Carl W. Hoeker, Inspector General of the Sec. and Exch. Comm'n, to Mary Jo White,

We expect these cases to give rise to significantly greater examinations of dark pool operations and disclosures going forward, as well as the exploration of a number of market structure reforms. These reforms may include revisions to required ATS disclosures, Rules 605 and 606, best execution standards, and potentially even conflicts of interest prohibitions.

PATH FORWARD FOR INVESTORS

The path forward for investors should be viewed in two stages: immediate concerns and longer-term concerns. In the immediate term, investors need to consider whether they should continue trading with dark pools that have been involved in regulatory actions, as well as other dark pools, and under what circumstances. Over the longer term, investors need to focus on how they can reform the markets and regulatory regime to better protect themselves.

CAN I CONTINUE TRADING IN THIS DARK POOL?

The breadth and depth of regulatory enforcement actions has directly called into question the integrity of several key dark pools. As news of each new dark pool investigation hits the press, many institutional investors have begun to look back at their trading data to see if they can decipher whether and to what extent they have been harmed by the wrongdoing. There are two important reasons for doing this: (1) determining whether they were harmed (and should seek damages from the dark pool), and (2) deciding whether to continue to use the dark pool.

> *Investors should question the efficacy of the data and analyses being used to evaluate "best execution" if they failed to detect execution quality issues at the venues that clearly disadvantaged them.*

A retrospective review of trading at a venue that has been punished for wrongdoing is an essential exercise. But the results are unlikely to provide much guidance for an investor. After all, institutional investors already have "best execution" committees and most of them hire third parties to routinely analyze trading data and advise on order routing decisions. Investors should question the efficacy of the data and analyses being used to evaluate "best execution" if they failed to detect execution quality issues at the venues that clearly disadvantaged them.

Chair of the Sec. and Exch. Comm'n and Jeffery Heslop, Chief Oper. Officer of the Sec. and Exch. Comm'n, Jul. 6, 2015, *available at* https://www.sec.gov/oig/reportspubs/evaluation-of-sec-use-of-reserve-fund.pdf.

Some firms have even hired their own quantitative trading experts to help them analyze their trading patterns and execution quality.[131] In most cases, despite all of the resources and attention, the wrongdoing at these dark pools went undetected.

> *Detailed trading analyses are important, but they are also subject to the quality and breadth of information provided, as well as to the technical expertise, biases, and analytical capabilities of providers.*

One reason is that most investors lack comprehensive market data against which to compare their trading.[132] In recent months, some firms have sought to quickly fill this need through enhanced analyses by comparing their customers' information against public market information about executions. Detailed trading analyses are important, but they are also subject to the quality and breadth of information provided, as well as to the technical expertise, biases, and analytical capabilities of providers.

These analyses will also take time to complete, and once completed, will likely provide little illumination. Of course, if a venue is shown to perform extremely poorly, then an investor or broker should immediately suspend trading at that venue, and route elsewhere. But if the analysis was already clear-cut enough to make this determination, we suspect that such poor performance would have already been identified and order flow to that venue curtailed.

Thus, an investor or broker should supplement this retrospective data analysis with a review of other factors that should inform its routing decisions. These factors should include the investor's or broker's:

- general history with the dark pool;
- knowledge of the dark pool's execution practices, including whether the dark pool is affiliated with a firm that also engages in proprietary trading;

[131] *See, e.g.*, Sam Mamudi, *Invesco's Cronin Has SEC Playing Catch-Up on Safe Trading*, Bloomberg, (Feb. 26, 2015).
[132] The long-awaited Consolidated Audit Trail would ostensibly give regulators a powerful new tool to help police the markets. However, the current proposal is to not have the information be made public, out of concerns for protecting proprietary trading by market participants. Unfortunately, by failing to disclose the data, the SEC would essentially eviscerate the single best use of the data, which would be to aid market participants in their analysis of the markets and their own trading performance. It is also years away from existence. In the meantime, the SEC's Market Information and Data Analytics System (MIDAS) appears to be little more than a consolidation of the proprietary data feeds from various market venues, akin to the standard information available to any high-frequency trading firm. This makes sense, as the specifications for it were prepared in consultation with high frequency trading firms, and it was ultimately built for the SEC by one such firm. Here, too, the data is not public, again depriving investors of the ability to use it in their statistical analyses. For more information on MIDAS, see http://www.sec.gov/marketstructure/midas.html.

- relationship to the dark pool, including whether it has a controlling or other ownership interest; and
- knowledge of the dark pool's other subscribers.

If an investor has a longstanding relationship with a dark pool, and its experience has been favorable, then the investor should factor this history into its forward-looking order routing practices. At the same time, an investor or broker routing an order to a dark pool needs to know how it works:

- Is it exclusively buy-side firms, or are other firms allowed into the pool?
- What are the characteristics of other firms?
- What are the minimum execution sizes?
- What do the distribution of order and trade sizes look like?
- How are orders matched? For example, if orders are matched at the midpoint, is that the midpoint of the National Best Bid and Offer or is it at the midpoint of the spread based on proprietary data feeds?
- Does the dark pool operator have a proprietary trading desk? If so, does that desk have access to the pool or any data about subscribers that is not shared with all other subscribers?
- Is the dark pool affiliated with the firm that may be routing investor orders?
- What is the process used by their order router to select this dark pool as opposed to any other execution venue?

These questions, and the others contained in the Healthy Markets ATS Questionnaire, should help an investor understand the quality of the executions received, as well as the risks and conflicts of interest facing the dark pool operator.

Without knowing the answers to these basic questions, investors should be very reluctant to reward a dark pool with their orders.[133] In addition, the substance of the answers to these questions is equally important. For example, we are skeptical about utilizing order routing services that consistently result in orders being routed to any particular venue, and would be extremely skeptical of any routing product that consistently routes to a broker's affiliated dark pool. The conflicts of interest with any proprietary trading desk in a dark pool are profound. Affiliated trading desks may increase fill rates, as they did with Pipeline and ITG, but they may also be used to profit at the expense of the dark pools' subscribers. We are deeply skeptical of any dark pool that maintains a trading desk or allows an affiliate to trade in the pool.

Even if an investor wants to route away from a particular dark pool, doing so may not be easy. Brokers' order routing systems will need to be reconfigured and programmed, and verifying that brokers honored these requests requires diligence and careful analysis.

[133] It is worth noting that complete and accurate responses to the Healthy Markets ATS Questionnaire would fill in these gaps.

Even worse, investors and brokers may feel compelled – as a legal matter – to continue to access any significant pools of liquidity. Investors and brokers are required to scour potential sources of liquidity and utilize those that are most likely to help them achieve high quality executions. When a dark pool is a significant source of liquidity, such as UBS ATS, then investors and brokers may thus feel compelled to continue utilizing it. And if each investor and broker feels that way, then each will continue to send orders to the venue. Consequently, other investors may feel similarly compelled to do the same, the net result of which is continued order and execution volumes. This essentially amounts to a perverse reward for any "too big to fail" pool of liquidity.

An investor may also want to continue to use a broker that has generally performed well for it in the past, even if that broker has an affiliated dark pool that causes the investor concerns. These relationships may be in equities trading, or they may not. For example, an investor may not want to damage a relationship with a broker that provides it with a wide array of services, from research, to fixed income trading, to derivatives trading around the world. The investor may feel compelled to continue using that broker, even if it comes with the "price" of continuing to route to the broker's affiliated dark pool.

> *Investors and brokers should not feel compelled to continue to route orders to venues they do not trust.*

These two phenomena are significantly more likely to impact investors' and brokers' behaviors with larger dark pools, and with those that are affiliated with firms that provide other services. Collectively, we believe that these phenomena may also explain the relatively tepid reaction of investors to UBS's settlement. It is also for that reason that we believe that the impact on Credit Suisse's settlement—despite its reported size—may be tepid. Again, this is in sharp contrast to the way investors reacted to enforcement actions against Pipeline and ITG.

Investors and brokers should not feel compelled to continue to route orders to venues they do not trust. At the same time, if they know how a dark pool works, and if this pool has performed well for them in the past, and if they trust its leadership going forward, investors and brokers do have a right to feel comfortable continuing to utilize this dark pool. This requires both investors and brokers to conduct due diligence to ensure that all of the above-mentioned conditions are met and documented, and to verify claims made by ATS operators, likely through some third-party auditing.

HOW CAN I BETTER PROTECT MYSELF?

At the same time that firms are making judgments concerning how they can trade and with whom, they should also be thinking about how they can create a safer trading environment over the long term. Investors and regulators, working together, should (i) demand enhanced disclosures about order routing and executions; (ii) update expectations regarding dark pools' conflicts of interest; (iii) update and modernize best execution expectations; and (iv) promote alternative trading venues.

STRENGTHEN DARK POOLS' DISCLOSURES

Investors need to know how their orders are handled and executed. Smart order routers and dark pools cannot simply be "black boxes," whose operations and conflicts of interest are unknown.

An increasingly common technique for investors to learn about their dark pools' operations is to send dark pool operators surveys. In recent years, the proliferation of these largely overlapping but conceptually distinct surveys has provided investors with some additional information. Unfortunately, many of these voluntary surveys still have substantive gaps, while others are simply not completed by their recipients.[134]

We recommend that investors work with dark pool operators to develop a standardized industry survey, which can be used to inform disclosure "best practices."[135] Investors and brokers should demand completion of this survey on at least a quarterly basis. By standardizing the survey, investors will both streamline the process for ATSs and improve the comparability of results across market venues. We firmly believe this should form the basis for public disclosures, and that this will help ensure consistency between public and private disclosures.

> *Investors should aggressively leverage their order flow – individually and collectively – to obtain critical information about the handling and execution of their orders.*

In addition to basic transparency reforms, we expect market participants to start demanding better data regarding the quality of trade executions. Investors should be engaging in significant statistical analyses of execution quality across asset types, order sizes, and other characteristics

[134] It is unclear whether or to what extent particular dark pools that have been subject to regulatory action responded to customers' surveys in the past, or whether information provided in response to such surveys was complete and accurate.

[135] The Healthy Markets Association and KOR Group ATS Questionnaire, which is used to determine scores on our proprietary ATS Transparency Index™, could serve this purpose. This survey is freely available to institutional investors.

across multiple venues.[136] Investors should be willing to route orders away from venues that fail to provide basic information about their order handling and execution practices. And as we discussed below, investors may be obligated to do so. Investors should aggressively leverage their order flow – individually and collectively – to obtain critical information about the handling and execution of their orders.

Development of "best practices" is essential. Though regulators may find themselves playing catch-up in their rulemakings, the final rules quite often seek to codify current best practices. An excellent example of regulation adopted from best practices is the recent move by FINRA to begin publishing ATS statistics.[137] Initially driven by firms seeking a better understanding of trading volumes, several industry analysts began publishing volume statistics. When certain firms discontinued publishing statistics,[138] FINRA then required regularly published ATS statistics. These statistics are now freely available.[139] The FINRA ATS statistics have been immensely beneficial as firms work to better understand dark pool volume levels on a per-symbol basis, and have helped guide order routing decisions. It took the industry's push for best practices to spur FINRA's adoption of these disclosures.

Market-driven reforms are likely to be sporadic and insufficient to fully and adequately inform and protect investors. Efforts to implement best practices should be supplemented by thoughtful regulatory protections from the SEC, FINRA, and state regulators. The SEC has indicated that it is looking to propose significant reforms to ATS registration and disclosures this year, and the SEC Chair publicly called for order routing reforms in June 2014. Similarly, the NYAG could establish de facto "best practices" and industry standards through the settlement process, as was most-famously done with the global research analyst settlement of 2003.[140]

Aside from information about dark pool operations, investors also need more and better data about order routing and executions. Investors should be able to quantitatively test the quality of the services available to them. While private industry efforts are currently pushing data availability forward, there have not been any organized, concerted efforts to establish data standards, impose clock synchronization standards, or require brokers to make critical data available to investors.

Regulators are even further behind. At a bare minimum, investors should work with regulators to modernize Rules 605 and 606 to reflect the modern capital markets where orders are now placed, evaluated, and executed or cancelled within milliseconds. The SEC's internal order data

[136] A number of firms provide these services for investors and brokers, such as KOR Group and Markit.
[137] See FINRA Rule 4552.
[138] See Matthew Philips, *Credit Suisse is Making Dark Pools Even Darker*, Bloomberg, (Apr. 22, 2013).
[139] FINRA ATS Data, *available at* http://ats.finra.org.
[140] See Joint Press Release, Sec. and Exch. Comm'n, NYAG, North American Sec. Admin. Assoc., NASD, NYSE, Ten of Nation's Top Investment Firms Settle Enforcement Actions Involving Conflicts of Interest Between Research and Investment Banking, Apr. 28, 2003.

system, MIDAS, also needs an upgrade. In the absence of the Consolidated Audit Trail,[141] MIDAS data needs to be expanded to cover hidden orders on lit exchanges, resting orders and IOIs on dark pools, un-filled IOCs and exotic orders as well as other asset classes, such as Futures.[142]

The purpose of an audit trail is to know what happened and when. Clock synchronization is absolutely critical to a proper understanding and interpretation of order audit trails. We believe that investors and regulators should dramatically upgrade demands for synchronized clocks across all Exchanges and ATSs.[143]

The SEC is reportedly working on proposals to reform Rules 605 and 606, as well as the ATS reporting requirements. Unfortunately, to date, regulators have not proposed any substantive reforms, and there is reason to believe that any regulatory reforms that are eventually proposed will take years to implement.

AVOID AND MITIGATE DARK POOLS' CONFLICTS OF INTEREST

Broker-dealers who route orders, operate an ATS and have a proprietary trading desk are fulfilling the holy trinity of conflicts of interest. Their order routing operation is incentivized to route orders to the ATS to reduce fees, and as volume increases in both the ATS and order routing operations, it becomes mutually beneficial (regardless of the quality of those executions to long-term investors). Their proprietary trading operation stands at odds with both of these "agency" responsibilities, and can lead to practices such as co-location / cross-connects into the ATS, and adoption of slower technology within the ATS that can increase profits for some aggressive high-speed traders at the expense of long-term investors. Investors should know about any ATS features that could be used by proprietary trading systems or that may only be available to the broker's order routing systems. Our ATS Questionnaire includes a section specifically designed to allow non-independent ATSs to disclose such operations. However, we are extremely skeptical that these conflicts of interest may be cured by mere disclosure.

Broker-dealers who route orders, operate an ATS and have a proprietary trading desk are fulfilling the holy trinity of conflicts of interest.

[141] Describing the tortured history of the Consolidated Audit Trail would take far more pages than we have for this Report. Proposed in 2010, the project appears to be nowhere close to helping investors or regulators. SEC-imposed deadlines have been blown. Nothing is built. And the specifications of what is to be built appear to be so materially deficient that it is unclear what utility it will provide to investors or regulators if it ever comes into existence.

[142] See Letter from Chris Nagy and Dave Lauer, Healthy Markets Association and KOR Group, to Steven Luparello, Sec. and Exch. Comm'n, Sept. 22, 2014, *available at* http://www.healthymarkets.org/sec-comment-accelerating-data-driven-regulation/.

[143] We believe that the minimum standard necessary to allow for ready interpretations and analysis would be 10 microseconds. For more on our views of clock synchronization, please see our comment letter. Letter from Chris Nagy and Dave Lauer, Healthy Markets and KOR Group, to Marcia E. Asquith, FINRA, Feb. 20, 2015, *available at* http://www.healthymarkets.org/sec-comment-finra-clock-synchronization/.

UPDATE POLICIES, PROCEDURES AND PRACTICES REGARDING BEST EXECUTION

"Best execution" obligations and fiduciary duties collectively form the bedrock of our trading markets by creating a baseline defense for investors. Yet they are not defined by federal securities laws. They are instead largely defined through case law and regulatory interpretations. At its simplest, the fiduciary duty can be thought of as an obligation to put the best interests of the customer first.[144] Investment advisers have fiduciary duties to their customers, and this extends to the advisers' selection of brokers to whom they provide orders.[145]

At the same time, their brokers have a duty to seek "best execution." Price is usually thought of as the most important factor. That said, as a practical matter, "best execution is not necessarily the most favorable price point or lowest commission cost, but whether the transaction represents the best quantitative and qualitative execution for the client account."[146]

A broker's best execution obligation does not require the broker to achieve best execution. It simply requires the broker to seek it. Thus, fulfillment of a broker's duty is one of process, not necessarily results. FINRA requires brokers to "use reasonable diligence to ascertain the best market for the subject security and buy or sell in such market so that the resultant price to the customer is as favorable as possible under prevailing market condition."[147] Similarly, the SEC has declared that brokers "must consider … the opportunity to get a better price than what is currently quoted, the speed of execution, and the likelihood that the trade will be executed."[148]

To help tie the required process to the intended results, brokers are further obligated to perform regular and rigorous reviews of execution quality to ensure they are receiving the best terms available. Investment advisers, as fiduciaries, also review their execution quality statistics to make sure they are using the right brokers. This has resulted in the creation of "Best

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[144] We recognize the oversimplification of the exceedingly complex analyses regarding fiduciary duties, as well as the ongoing discussions and rulemakings related to "fiduciary duties." We do not wish to engage in that discussion here.

[145] Over the past decade, the SEC has thus brought enforcement cases against investment advisers for violating this duty in their broker-selection process. *See, e.g.*, In the Matter of A.R. Schmeidler & Co., Inc., Inv. Adv. Act Rel. No. 3637 (Jul 31, 2013).

[146] RBC Global Asset Management, Best Execution: Defining Best Execution in an Increasingly Complex Trading Environment, 2 (Fall 2010), *available at* https://us.rbcgam.com/resources/docs/pdf/whitepapers/equity%20trading%20paper_best%20execution.pdf.

[147] FINRA Rule 5310. The rule further articulates that "[a]mong the factors that will be considered in determining whether a member has used "reasonable diligence" are:

A. the character of the market for the security (e.g., price, volatility, relative liquidity, and pressure on available communications);
B. the size and type of transaction;
C. the number of markets checked;
D. accessibility of the quotation; and
E. the terms and conditions of the order which result in the transaction, as communicated to the member and persons associated with the member." FINRA Rule 5310.

[148] See Sec. and Exch. Comm'n, Fast Answers: Best Execution, *available at* http://www.sec.gov/answers/bestex.htm.

Execution" Committees on fund boards, as well as a raft of consultants providing so-called "best execution" analysis.

> *Investors need to know how their orders are handled, routed, and executed.*

In light of the cases outlined by this report, as well as other high-profile media reports calling into question the integrity of our capital markets, we expect enforcement and reform efforts to expand. Fund board members and best execution committees are already asking questions about what their funds' traders are doing to protect them from abuses. How can a trader argue that he is fulfilling his best execution obligations when he doesn't know how his orders are handled, or even how they are executed?

Thus, to satisfy such questions, we believe that investors' obligations to review their brokers' performance extends to the choice of execution venues. Investors need to know how their orders are handled, routed, and executed. With this level of scrutiny, we expect that traders may feel compelled to route orders away from venues that are without certain basic degrees of transparency or are lacking quantitatively measured execution quality. The SEC may, of course, accelerate this process through potential revisions to its rules or additional guidance, but while SEC action in this area has been rumored for years, no actions have been proposed or taken to date.

PROMOTE AND REWARD TRANSPARENT AND LESS-CONFLICTED VENUES

Investors and other market participants should seek to create, promote, and reward trading venues that have fewer conflicts of interest, and provide them with transparent operations and high-quality executions.

From an investor's perspective, a dark pool, as with an exchange, is essentially performing a utility-like function. The greater the profit motive for the dark pool or its operators, the stronger the incentive for the dark pool to accept or encourage practices, or engage in behaviors that may drive up the venue's profits at the expense of investors who trade there.

Numerous dark pools – including all of the ones subject to regulatory actions –purportedly operate to provide safer trading for investors. That said, some dark pools that are not directly affiliated with a particular brokerage firm, such as Liquidnet and BIDS, may present investors

with fewer conflicts of interest. In addition, a number of new investor-focused venues have been proposed or are starting operations, such as IEX, Luminex, and Plato.[149]

IEX, which was funded by firms seeking to build a trading venue with protections in place for long-term investors, just surpassed 1% of daily trading volume, and is currently in the process of becoming an exchange. Luminex was founded by institutional investors to develop a block trading venue in which only natural investors can interact with each other. Plato is a non-profit organization in Europe founded by the brokerage community and investors to develop a trading venue without the traditional profit incentives, and in which profits are funneled into a research institute.

Each of these venues is at a different stage in its development, and each is intended to serve a different role in the markets. All are relatively new, and whether or not they will succeed remains to be seen. That said, whether these venues or others, investors should support trading venues that present them with greater transparency about their operations and fewer conflicts of interest.

CONCLUSION

Dark pools play an important role in our markets. Unfortunately, recent regulatory actions against dark pool operators have demonstrated that investors are justified in their longstanding fears over dark pools' lack of transparency. Investors and their brokers must revise their own practices and expectations to better protect themselves from dark pool abuses. By demanding more transparency and lesser conflicts of interest, investors and their brokers may help ensure dark pools continue to play a constructive role in US capital markets in the years to come.

[149] Each of these venues faces significant hurdles to its success. Most importantly, for each new dark pool, the operator will need to carefully determine whether and how to make executions happen with enough volume to add value for its subscribers, while also not diluting the quality of executions, or worse, driving up overall trading costs for investors. The benefits of a captive trading desk to a dark pool, particularly through increased fill rates, may be productive, but the conflicts of interest it creates may also be extreme. One way to mitigate the impact of this conflict might be through a mutually-owned model, or some other structure where the profits and losses to the venue accrue directly to its subscribers in proportion to their trading volumes on that venue.

HEALTHY MARKETS
TRANSPARENCY & TRUST

Exhibit 2

Modernize SEC Rules 605/606 - Execution Benchmarks, Measurements and Best Execution policy

Market quality metrics are woefully outdated. As initially envisioned in 2001, these metrics helped to spur competition for order execution quality and drove changes in behavior. These statistics now cover very few of the multitude of available order types and are easily manipulated because they have not kept up with advances in technology.

In order to help the public and brokers make informed decisions about market center order execution quality, Rule 605 must be updated. Now is the time to modernize Rule 605 before any other rules and changes are placed into the market. In modernizing the Rule, the following should be considered:

Rule 605

- Amend Rule 605 to capture the full range of order execution.
  - Add and require "Immediate or Cancel", "Peg", "Hidden", "Flash" order types to be reported separate from Market Orders.
  - Include Market Opening/Closing/Reopening orders.
- Require all ATS and Dark Pools to report separately from their affiliated broker/dealer under Rule 605.
- Shorten the reporting time-frame and require the reports be made available monthly 15 calendar days following the end of the preceding month. Require all historical reports remain freely and easily accessible.
- Centralize reporting of 605 reports (e.g. SEC or FINRA database)
- Require all statistics to be based on proprietary feeds (if the venue uses them) rather than the current SIP requirement.
- Replace execution time categories as follows:
  - Less than 500 microseconds
  - 500 microseconds – 1 millisecond
  - 1-10 milliseconds
  - 10-100 milliseconds
  - 100 milliseconds to one second
  - Current categories
- Expand coverage to Odd-Lot orders and executions.
- Expand order buckets size categories:
  - 1-99 shares
  - 100 share increments to 9,999 shares
  - 10,000 – 24,999
  - Greater than 25,000
- Add Covered Trades.

- Expand Realized Spread into separate buckets (e.g. 50ms, 100ms…3minutes) to better identify adverse selection.
- Add “Realized Liquidity” by taking the displayed BBO size in relation to the size of the order.
- Add “Quoted Spread”.
- Add “Spread Leeway” (Quoted Spread divided by the Minimum Price Variation).
- Add “Average Time to Execution” for all non-marketable limit orders.
- Require that reports contain header information.
- 605 statistics should be calculated for:
    - Orders that execute on the receiving platform
    - Orders routed out
    - Routed and not routed orders
    - Expand Rule 605 to Exchange traded option securities.

HEALTHY MARKETS
TRANSPARENCY & TRUST

Exhibit 3

Quantitative ATS Disclosure

Healthy Markets strongly believes in data-driven market structure reform, and empowering investors with the right information so that they can make educated decisions regarding counterparty interaction and venue selection.

Healthy Markets believes that there are two possible paths to a sufficiently descriptive disclosure regime that will allow firms to make informed decisions about ATS interaction. First, we further encourage the SEC and FINRA to work collaboratively to require this information pursuant to a revised FINRA ATS reporting regime (as opposed to a separate SEC reporting regime), in conjunction with the new ATS-N rule proposal. In the meantime, we encourage ATSs to self-report this critical information, and will advocate for market participants to adopt a voluntary disclosure standard.

Substantively, our proposal herein reflects only such information as should be required to be reported on a monthly or quarterly basis, and does not reflect such other qualitative and quantitative disclosures as may be provided pursuant to ATS-N. Our recommended routine disclosures fall into the following categories:

- order and trading descriptive statistics,
- subscriber characteristics, and
- relationships and trading statistics.

Order and Trading Descriptive Statistics

There are two primary categories of order and trading statistics that participants need to make informed venue interaction decisions. The first is based on the dynamics of incoming orders and the resulting trades that occur. All of these can be generated from the current FINRA ATS Data Collection efforts. The second is focused on price improvement and principal trading.

FINRA ATS Data Collection can supply the following statistics, which would give market participants far greater insight into ATS trading activity (and all of which can be generated using publicly available market data for public Exchanges):

1. While current FINRA data provides a reasonable picture of what is occurring on an ATS on a weekly basis, we believe a more granular view into daily trading patterns would be more useful for market participants and provide an equivalent level of data as that available for public Exchanges. This should be split out by Tape A, B and C, and cover:
    a. Average daily trading data in aggregate by Tape, and by symbol:
        i. Shares traded
        ii. Executed trades
        iii. Notional value traded

2. While attention is often paid to trading dynamics, the dynamics of venue order flow are critically important for participants to understand. They need to know what sized orders are normally being sent to a venue in order to understand how they should interact with it and size their flow. This can be done with public Exchanges, but not with ATSs. Therefore we believe it would be helpful for FINRA to provide, on a monthly basis, the distribution of orders and trades, by shares and notional value, in the following buckets:
    a. < 100 shares
    b. 100-199 shares
    c. 200-299 shares
    d. 300-399 shares
    e. 400-499 shares
    f. 500-999 shares
    g. 1,000-4,999 shares
    h. 5,000-9,999 shares
    i. >=10,000 shares
3. Finally, specifically in regards to block trading, an additional set of disclosures would be helpful to participants, and would conform to the existing level of disclosure that many ATSs already provide. This would include the following:
    a. Percentage of orders that are Blocks or Demi-Blocks by shares
    b. Percentage of orders that are Blocks or Demi-Blocks by notional value
    c. Percentage of trades that are Blocks or Demi-Blocks by shares
    d. Percentage of trades that are Blocks or Demi-Blocks by notional value

Additionally, there is a small set of information that would be helpful for participants to know, but that FINRA could not generate entirely with the current set of data being collected. We believe this should be included in periodic updates to Part IV of ATS-N, or in a supplemental monthly disclosure.

1. Most ATSs provide price improvement, and advertise this as one of their most desirable features outside of preventing information leakage. While many ATSs offer price improvement features, there is no way for participants to judge the relative merits of these offerings, or to understand the order flow dynamics on one ATS versus another with regards to price improvement. The following metrics would allow them to make this judgement:
    a. Percentage of orders that receive price improvement
    b. Percentage of orders filled at the midpoint
    c. Provider:
        i. Average amount of price improvement (basis points)
        ii. Median amount of price improvement (basis points)
    d. Taker:
        i. Average amount of price improvement (basis points)
        ii. Median amount of price improvement (basis points)

2. Finally, as we have seen in several enforcement cases, principal trading in an ATS is one of the areas that has been abused in the past, and a primary area of concern for the Commission. While we believe more detailed statistics are necessary, and outline some of those below in the ATS Relationships and Trading Statistics section, we still believe that the following metrics more appropriately belong in this section:
    a. Percent of trades/executed shares with principal capacity on at least one side
    b. Percent of trades/executed shares with principal capacity from affiliated broker/dealer on at least one side

Subscriber Characteristics

It is clear in the ATS market that segmentation of subscribers is critically important. Nearly all ATSs offer some form of segmentation and discrimination. Often this is based on quantitative characteristics that the ATS uses to categorize participants. Other times this can be based on the speed of the lines that participants use to access the ATS. Other examples are based on self-declaration of participants, and ongoing monitoring.

Most ATSs that segment or categorize participants allow other participants to opt-out of trading with certain segments. In order to make informed decisions about what type of order flow a participants wants to interact with, and uphold their best execution responsibilities, participants must be provided with additional information regarding these segments. We therefore believe that adopting current industry best practices and mandating it for all ATSs would be allow informed decision-making.

We recommend something similar to that used by Deutsche Bank[1], with some additional information as detailed below.

Counterparty Type Summary

CounterParty Type	% Filled Shares	Average Fill Size	Spread (bps)	Spread Savings (bps)	Spread Savings (%)	Midpoint Slippage (bps)	T+20ms (bps)	T+30s (bps)	T+60min (bps)
LP Institutional	37.40%	224	6.74	3.37	50.00%	0.07	0.17	-0.3	-0.7
LP Market Maker	29.30%	173	4.24	1.86	43.80%	-0.75	-0.57	-0.24	0.2
DB Agency	26.80%	181	6.04	3.24	53.60%	0.53	0.31	0.65	0.56
DB Principal	6.10%	220	4.48	2.65	59.30%	0.55	0.28	0.34	1.05
LP Exchange	0.40%	198	3.89	3.67	94.30%	1.7	-0.99	-2.35	-0.06
Total	100.00%	194	5.7	2.87	50.00%	0	0	0	0

CounterParty Type	% Filled Shares	Average Fill Size	Spread (bps)	Spread Savings (bps)	Spread Savings (%)	Midpoint Slippage (bps)	T+20ms (bps)	T+30s (bps)	T+60min (bps)
LP IOC	23.20%	165	4.84	3.01	62.30%	0.33	-0.85	-1.08	-0.77
Total	23.20%	165	4.84	3.01	62.30%	0.33	-0.85	-1.08	-0.77

[1] Located at: https://autobahn.db.com/microSite/docs/SuperX_AggregateStats_2015Q4.pdf.

1. The following metrics by subscriber category would expand slightly on the Deutsche Bank model:
    a. Average order size in shares
    b. Average order size in notional dollars
    c. % filled shares
    d. % filled notional dollars
    e. Average fill size in shares
    f. Average fill size in notional dollars
    g. Spread (bps)
    h. Spread Savings (bps)
    i. Spread Savings (%)
    j. Midpoint Slippage (bps)
    k. T+20ms (bps)
    l. T+30s (bps)
    m. T+60min (bps)
2. Additional information on institutional trading and liquidity provider concentration would provide a far more detailed view on the trading dynamics of the ATS. It would allow participants to understand who they are likely to trade with, and to make decisions accordingly. These metrics should be straightforward and simple to generate:
    a. Percentage of natural-to-natural trades
    b. Liquidity provider concentration
        i. Percentage of trades that come from top 5 participants, and for each, the average trade size by shares and notional dollars.
        ii. Percentage of orders that come from top 5 participants, and for each, the average order size by shares and notional dollars.
3. Finally, given the complexity of order types and order type interaction, and specifically concerned about IOI/Conditional Orders and information leakage (based on past enforcement actions), there should be substantially more disclosure on order type usage. This disclosure could be made quarterly as part of Part IV of ATS-N, and should also be broken out based on any segmentation or categorization that the ATS identifies.
    a. Percentage of orders for each order type, by counterparty category/segment.
    b. Percentage of trades for each order type, by counterparty category/segment.
    c. Active vs Passive percentage for each order type, by counterparty category/segment.
    d. Specifically for IOIs or Conditional orders, by category/segment:
        i. Average/Median order size for conditional orders or IOIs.
        ii. Number of Firm Orders received and number of Firm-Up Requests sent.

ATS Relationships and Trading Statistics

Trading by an ATS operator or an affiliated broker/dealer in an ATS poses distinct potential conflicts of interest for the the ATS. Other conflicts-of-interest, such as compensation arising from arrangements to provide other market centers with access to the ATS, should be

quantified and disclosed to the fullest extent possible. This section is intended to identify the potential magnitude of these potential conflicts of interest.

1. On a Monthly Basis, Compensation from Unaffiliated Trading Centers: A total of all payments or compensation received from unaffiliated trading centers (including third-party market makers) by an ATS or an affiliated broker/dealer pursuant to an arrangement wherein the ATS or its affiliate agrees to provide access to the ATS, including any "first look" or last look" arrangements.
2. For each trading center with which the ATS or an affiliate broker/dealer has an arrangement included in responses to #1, please list, by trading center:
    a. Percentage of client orders routed to the trading center before being routed to any other destination (excluding the ATS)
    b. Percentage of client orders that are filled at the trading center
    c. For all trades routed to the trading center:
        i. Spread (bps)
        ii. Spread Savings (bps)
        iii. Spread Savings (%)
        iv. Midpoint Slippage (bps)
        v. T+20ms (bps)
        vi. T+30s (bps)
        vii. T+60min (bps)
3. On a Monthly Basis, Order Routing Information: This applies to ATSs that either directly offer or have an affiliated broker/dealer that offers order routing capabilities (SOR):
    a. Percentage of client orders using the SOR that route to the ATS before being routed to any other destination
    b. Percentage of client orders using the SOR that are filled in the ATS
4. On a Monthly Basis, Volume of Orders and Executions For ATS Operator and Any Affiliate Trading in the ATS: For any ATS whose operator or affiliated broker/dealer trades in the ATS, the following should be disclosed by Order/Trade Size Bucket: < 100 shares, 100-199, 200-299, 300-399, 400-499, 500-999, 1,000-4,999, 5,000-9,999, >=10,000:
    a. Number of orders sent to the ATS.
    b. Number of shares sent to the ATS.
    c. Notional value of orders sent to the ATS.
    d. Number of executed orders.
    e. Total number of shares executed.
    f. Total notional value executed.
5. On a Monthly Basis, Profits From ATS Operator's and Any Affiliate's Trading in the ATS: For any ATS whose operator or affiliate trades in the ATS, the monthly gross profits attributable to trades executed in the ATS.