December 14, 2015

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

Re: Release No. 34-76470, File No. SR-BATS-2015-101, Notice of Filing of a Proposed Rule Change, as Modified by Amendment No. 1 Thereto, to Adopt Rule 8.17 to Provide a Process for an Expedited Suspension Proceeding and Rule 12.15 to Prohibit Disruptive Quoting and Trading Activity

Dear Mr. Fields:

Thank you for the chance to comment on the above noted filing ("Filing"). It's déjà vu all over again, as Yogi Berra might say, with this Filing saying much the same we saw in the last version. According to BATS there's a very certain kind of spoofing and layering (collectively, "spoofing") crisis in the equities markets. Hold Brothers and Biremis are examples of the crisis and it took far too long to round them up. BATS needs expedited enforcement procedures to stop the bad guys, and returns with this Filing to again define the bad behavior prescriptively, though other regulators have for years defined it with principles-based language. And there's no mention of what many believe are far more widespread spoofing abuses than the very few examples BATS included in its Statement of Purpose for the Filing.

Many of my criticisms of the previous version of this Filing[1] were not addressed in the BATS response.[2] We're left with the same mechanical justifications for the Filing and the same spoofing checklists. Once again BATS points to a few enforcement cases in recent years as justification for the Filing, never mind that its checklists don't address them all, and never mind that its definitions of spoofing - er, disruptive quoting and trading - are absurdly prescriptive. All other definitions of spoofing I could find that regulators (including BATS) have set down over the years, whether in exchange rulebooks or in enforcement settlements, are principles-based definitions.[3] Despite its own CEO's philosophy of regulation, clearly laid out in

[1] Letter from R. T. Leuchtkafer to Brent J. Fields, Secretary, SEC, dated September 4, 2015 ("First Comment").
[2] Letter from Anders Franzon, VP, Associate General Counsel, BATS, to Brent J. Fields, Secretary, SEC, dated November 6, 2015 ("BATS Response").
[3] For example, in its rules the CME defines spoofing generally as "an order with the intent, at the time of order entry, to cancel the order before execution or to modify the order to avoid execution." In an April 2015 enforcement action BATS defined spoofing as "a form of market manipulation that involves the market manipulator placing certain non-bona fide orders with the intention of cancelling those orders once they have triggered some type of market movement and/or response from other market participants, from which the market manipulator might benefit by trading certain other bona fide orders." Navinder Singh Sarao, whose indictment BATS references, is explicitly accused of spoofing, which is defined in count 22 of his indictment simply as "bidding or offering with the intent to cancel the bid or offer before execution." In the Hold Brothers order, which BATS references, spoofing and layering are defined as "the use of non-bona fide orders, or orders that the trader does not intend to have executed, to induce others to buy or sell the security at a price not representative of actual supply and demand." In the Biremis action, which BATS references, spoofing and layering are defined as "a false appearance of market activity by entering multiple non-bona fide orders on one side of the market, at generally increasing (or decreasing) prices, in order to move that stock's price in a direction where the trader intends to induce others to buy (or sell) at a price altered by the non-bona fide orders" and also as "non-bona fide orders (i.e., orders that the trader does not intend to execute) to induce others to buy or sell a security at a price not representative of prices set by actual supply and demand."

Congressional testimony some years ago[4], that just doesn't work for BATS here. I can find nowhere else in its rulebook where BATS describes step-by-step and order-by-order any kind of market manipulation in such prescriptive language, but for some reason BATS does it in this Filing. Congress defined spoofing with principles-based language in Dodd Frank, language strong and understandable enough to indict and swiftly convict Michael Coscia and strong and understandable enough to indict Navinder Singh Sarao. BATS is apparently unpersuaded by all these examples, including its own. Why? We can only guess.

In its Statement of Purpose for the Filing BATS includes three real-world spoofing enforcement actions as justification - Biremis, Hold Brothers, and Navinder Singh Sarao. We'll add a fourth example, the precedent-setting criminal conviction of Michael Coscia. To start, it's worth pointing out that in at least three of these four examples equities and futures exchange regulators either didn't spot the wrongdoing at all or they first decided to tolerate it. From press accounts we know that Hold Brothers, Coscia, and Sarao were ultimately fingered through industry complaints, and it's quite likely Biremis was too. And it's not as if the equities and futures exchanges have been tragically unequipped to pursue fraud. Principles-based laws and regulations in the Exchange Act, exchange rulebooks, and Dodd Frank have all been more than enough to sanction Hold Brothers and Biremis, to indict and convict Coscia, and to indict Sarao.

It's not clear what to conclude from the fact that BATS and the other equities and futures exchanges had little or nothing to do with discovering these cases - so far as I can tell BATS has never independently discovered spoofing conduct, not once, ever, on any of its four U.S. markets - though it's useful background when BATS tells us it "believes that there are certain obvious and uncomplicated cases of disruptive and manipulative behavior [née spoofing]" and the exchange needs new prescriptive definitions of violative conduct and new authority to expedite sanctions. If BATS thinks there are "obvious and uncomplicated cases" it's chomping at the bit to prosecute, cases which are so obvious and uncomplicated it can reduce them to a handy checklist in its rulebook, *where are they?* Imagine if the famously incompetent Sergeant Schultz of *Hogan's Heroes* complained that what he really needed to do his job well was a clipboard and a four-point checklist.

This is all shallow regulatory theater. A very large exchange group which has never detected a certain kind of market manipulation - at least as far as I can see - suddenly and inexplicably wants to define it in narrow, prescriptive terms, completely at odds with what its own executives have said is their regulatory philosophy. Its definitions are also at odds with how other exchanges have defined the behavior, with how the SEC has defined it, with how Congress has defined it, and with how it defined the behavior itself just months ago. More than that, the exchange group's current chairman recently told legislators his own view of regulation is that "market quality and stability can be improved" and we should "consider responsible, data-driven regulatory action where appropriate,"[5] but I can't find data-driven evidence from its own markets anywhere in the Filing.

The BATS Response does say the Filing is "designed to halt a very specific, readily identifiable type of illegal trading activity rather than an attempt to define and punish layering and spoofing in every conceivable context" (why not?) and that "it is not necessary to separately define" spoofing and layering but BATS will "revisit the issue if the need arises to specifically define layering and spoofing beyond the current generally accepted definitions of the prohibited illegal practices," which is all little more than a tease: What are the "current generally accepted definitions" BATS refers to, does BATS agree with those definitions, and where

[4] Statement of Chris Concannon to a hearing of the House Committee on Agriculture, February 3, 2009,"[W]e believe the key concept to keep in mind is to apply modern regulatory concepts like the principles-based approach to regulation practiced successfully by ... regulators around the world."
[5]Testimony of Joe Ratterman to a hearing of the Senate Permanent Subcommittee on Investigations, June 17, 2014.

does the proposed rule make all this clear? If the illegal trading activity is "very specific" and "readily identifiable," why doesn't BATS tell us what it has found on its four markets? If other exchanges adopt this language, as the press speculates, this deeply flawed and superficial proposal could quickly become the surveillance and enforcement spoofing standard for the equities markets.[6]

Once more, with feeling

Though a few people in the industry would swallow a bumblebee before they ever admitted it, a central storyline in Michael Lewis's *Flash Boys* is about spoofing.[7] Early in the book Lewis introduced the storyline this way:

> By the spring of 2007, when his screens showed 10,000 shares of Intel offered at $22 and he pushed the button [to buy the stock], the offers vanished. In his seven years as a trader he had always been able to look at the screens on his desk and *see* the stock market. Now the market as it appeared on his screens was an illusion.
>
> *and*
>
> [Why] did the market in any given stock dry up *only* when he was trying to trade in it?
>
> *and*
>
> A pattern was established: The moment he attempted to react to the market on his screens, the market moved. And it wasn't just him: The exact same thing was happening to all of the RBC stock market traders who worked for him.
>
> *and*
>
> When he tried to buy or sell stock and seize the payment from the BATS exchange, the market for that stock simply vanished, and the price of the stock moved away from him.
>
> *and*
>
> Why was was there a difference between the stock market displayed on his trading screens and the actual market? Why, when he went to buy 20,000 shares of IBM offered on his trading screens, did the market only sell him 2,000 .... "We started getting the idea that people were canceling orders," says Park. "That they were just phantom orders."

And much more - the first third of *Flash Boys* digs deep into these kinds of events.

[6] "Wall Street ready to fight against high-speed trading 'spoofers'", New York Post, August 22, 2015.
[7] Other core narratives in *Flash Boys* include predatory trading, conflicts-of-interest, market structure gaming, the high speed arms race, and other topics, but we'll stick with spoofing here.

In my First Comment I noted one reason for the phantoms and illusions[8]:

Critics say the high frequency trading market maker business model itself is little more than spoofing on a grand scale. A firm posts orders on multiple exchanges, and as soon as it's hit on one it races to cancel its orders on all the others. This is a common practice among HFT market makers, and by now they readily admit to it. The market data and research firm Nanex has documented it beautifully.[9]

The market makers say these practices help them avoid adverse selection, that when they're hit they've received some kind of "new information" that gives them license to cancel and re-price their orders on other exchanges. The practice also leads to gross misjudgements of available liquidity in the lit markets, just as we see it described in *Flash Boys*, with investors, practitioners, and academics as victims.[10]

So what is the "new information" these HFT firms use to justify their business models? It's simply that one of their displayed orders has traded. Their argument seems to be that yes, of course, they have *bona fide* orders on all the exchanges they fully intend to trade, but whenever someone takes any of that liquidity they're *shocked* by the fact someone wants to take their displayed price and size they must speed to cancel their remaining orders. Of course it's completely predictable, and presumably desirable, someone will take their liquidity - that's why it's displayed in the first place, to attract a contra - so it's not clear at all what's *new* about the "new information" they receive when they trade at a price they say they're willing to trade at. It is, after all, something they presumably intend to happen, something they advertise to have happen, something they make money from, something they hope a contra will do, something at the heart of their business model. It is the very core of what a *bona fide* order is supposed to be - you want it to trade. But when it happens it is apparently so surprising they must fly to cancel their outstanding quotes?

It's also a mystery how a firm can post *bona fide* orders on eight exchanges if it fully intends to cancel all its remaining orders if any one of them trades. That behavior sounds as if it easily falls under any one of the

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[8]At the time of these tweets Remco Lenterman was a senior executive of IMC and the chairman of the FIA European Principal Traders Association, a lobby group for high frequency traders. IMC describes itself as "a leading market maker, active on over 100 exchanges, platforms and pools of liquidity around the world" and "a leading Designated Market Maker (DMM) on the New York Stock Exchange (NYSE) providing liquidity in over 600 NYSE listed securities."

[9] See the report "Perfect Pilfering," available on the Nanex website.

[10] See Exchange Act Release No. 34-67246 (June 25, 2012), "NASDAQ has observed that upon partial execution of a routable order at NASDAQ, as in the example above, market participants often react to the order by cancelling their orders on other markets and entering new orders at inferior prices. This occurs because the current process directs the order to NASDAQ before attempting to access available liquidity at other markets and thereby allows market participants to react to the execution (an effect known as 'market impact' or 'information leakage'). As a consequence, the available shares at the away market are no longer available, resulting in a lower likelihood of successfully accessing liquidity on away markets (i.e., the 'fill rate') and *an increased likelihood of ultimately receiving an execution at an inferior price*." [Emphasis added.]

following "current generally accepted definitions" of spoofing BATS presumably refers to in the BATS Response but inexplicably left out of its rules:

> [P]lacing certain non-bona fide orders with the intention of cancelling those orders once they have triggered some type of market movement and/or response from other market participants, from which the market manipulator might benefit by trading certain other bona fide orders. [From a BATS enforcement action]
>
> *or*
>
> [B]idding or offering with the intent to cancel the bid or offer before execution [Dodd Frank]
>
> *or*
>
> [T]he use of non-bona fide orders, or orders that the trader does not intend to have executed, to induce others to buy or sell the security at a price not representative of actual supply and demand. [From the SEC order for Hold Brothers]
>
> *or*
>
> A. No person shall enter or cause to be entered an order with the intent, at the time of order entry, to cancel the order before execution or to modify the order to avoid execution; [From the CME rulebook]

Assuming the author of those two tweets meant that his firm will cancel its remaining quotes whenever it's completely filled on any one of them, the firm will cancel 15 quotes, for a cancel rate of 93.75%. If the author meant the firm will cancel its quotes for *any* fill against one of its quotes, even partial fills, depending on the metric the firm's cancel rate easily approaches 100%. Of course from the tweeter's telling of it we have to assume the firm does not intend to fill all its orders when it submits them, so taken as a package the firm is 100% certain to cancel everything it can of the package after the first trade, knows that beforehand, and whatever its subsequent cancel rate measured by share or order counts is irrelevant. It's worth noting it took a jury about an hour to convict Michael Coscia of spoofing in the futures markets for cancel rates of about 97%. As the prosecutor said in his closing argument for that trial, "You can't want something and cancel it at the same time." The Coscia jury was apparently unpersuaded by defense witnesses who argued Coscia was merely providing liquidity, following prices in the market, probing the market, conducting behavioral experiments, or that he was always at risk with actionable and tradeable orders in a completely electronic market. The jury was also unpersuaded by defense witnesses who argued everybody does it, or by Coscia's own explanation when he took the witness stand that all he did was to try to avoid adverse selection.

But let's talk about an individual order. We can likely agree any firm posting an individual order it is 100% certain to cancel is over the line. Now move that line to 99%. If I have as much as a 99-in-100 intent to cancel, is that a *bona fide* order? How about a 93.75-in-100 intent to cancel? And how does anyone looking at an exchange's quote tell the difference?

Firms say the darndest things

Whatever Chicago juries might think, HFT market makers portray themselves as hapless victims of adverse selection, but it's only because they want to display size on multiple exchanges that they're at risk. There's nothing that compels these firms to post any particular size orders on eight or even ten exchanges at once. They do it because they've found it more profitable to post size on multiple exchanges, and then cancel and re-price when they're hit, than it is to post smaller size on those exchanges and honor their quotes. A firm might want to trade no more than 1,000 shares at a time, but it doesn't know where it will find a contra, and its eyes are bigger than its stomach. So it posts that 1,000 shares on as many as ten exchanges, making 10,000 shares at risk though it only wants to trade 1,000. If the firm's hit at any one of the them, it cancels the other quotes and reprices.

Nothing compels it to post 1,000 shares in ten different places. It could just as easily post 100 shares on each of those ten exchanges. It could post 1,000 shares on only one exchange. It could post 500 shares on each of two exchanges. It has any number of options but the one it chooses is likely its most profitable, and what so many firms choose to do is to post more liquidity than they are in fact willing to trade, planning beforehand to cancel everything they can if a contra appears, all in the hope of maximizing profits. It is a very deliberate strategy that misleads the market because it is by now long past obvious the aggregate displayed size in today's HFT marketplace is "not representative of actual supply and demand."

For market participants, this behavior is also profoundly anti-competitive. If all a firm wants to trade is 1,000 shares at a price, once again, the firm could post 100 shares on each of ten exchanges. If it posts only 100 shares at a market, though, a contra at that market is much more likely to exhaust the firm's quote and trade with its competitors. It could also post 1,000 shares on only one exchange or 500 shares each on two exchanges. If the firm isn't on all exchanges at once, however, it might miss a contra, and that contra will trade with its competitors. So by posting the full 1,000 on every exchange the firm takes the biggest bite it can stomach and then rushes to fade everywhere else. Since fading successfully depends on speed, firms spend whatever it takes to be fast. The effect is that smaller competitors on any given market are squeezed out in the spoofing game, and the marketplace is soon dominated by a handful of large HFT firms with the resources to win the speed arms race.[11] Will this anti-competitive model someday tickle the curiosity of the Justice Department?

As for market centers, on the other hand, we can wonder whether all this sustains market fragmentation. If HFT market makers posted no more than their *bona fide* interest and cut back where they traded as a result, perhaps we wouldn't have so many market centers, and perhaps exchange groups like BATS would finally consolidate their order books. Since the business model is to "offer more liquidity than they're prepared to trade in one go" there's no end to how many market centers HFT "liquidity suppliers" can support if they're fast enough to cancel their remaining quotes when they're hit on any one of them.

[11] *See* "Risk and Return in High Frequency Trading" by Baron, Brogaard, and Kirilenko (2014). The authors examined a futures market, not the equities markets, but their insights certainly apply to equities: "In trying to understand the strong performance and persistence of returns to HFT firms, we also examine new entry. New entrants can potentially introduce competition and drive down both firm-level and industry profits. Given HFTs' high profitability, one might expect there to be strong incentives for entry, especially for firms that already have the technological capabilities and financial expertise to trade (market makers, hedge funds, broker-dealers, etc.), leading to increased competition and downward pressure on both firm-level and industry profits. However, in contrast to this expectation, we find that new entrants are substantially less profitable than incumbents and more likely to exit."

Are the liquidity suppliers on the BATS Group EDGX and EDGA exchanges substantially different from the liquidity suppliers on its BZX and BYX exchanges? Are the liquidity suppliers on the BZX exchange substantially different from the liquidity suppliers on the BYX exchange? And how are those firms different from the liquidity suppliers on Nasdaq, NYSE Arca, or on many of the dark pools? If a firm can post yet-another-quote somewhere confident it will cancel that quote faster than most can sweep it, there's no natural end to the number of market centers the HFT marketplace will enable. Very little of it is real liquidity, very little of whatever's in a quote comes from diverse participants, and at a certain height the market seems spread over dozens of venues while at ground level it's all the same handful of high-speed outfits.

Here's what things look like at ground level. In its comment letter on the IEX Form 1 filing[12] ("Hudson Letter"), Hudson River Trading[13] proposed the following example to explain why it thought the IEX speed bump and router were unfair:

> Example 3: IEX BD Router – IEX bypasses the POP allowing it beat a member to another exchange
>
> - Member C has an order to buy at 10.00 resting on IEX.
> - IEX has a routable sell order that fully executes Member C's buy interest on IEX.
> - ***When executed, Member C decides to update its buy order prices on another exchange from 10.00 to 9.99.***
> - The POP would delay Member C's execution information by 350 microseconds. As a result, although Member C's buy order on IEX has been executed, it does not know this for at least 350 microseconds.
> - Before Member C is informed of its buy order execution, the IEX BD Router sends an order to the other exchange to execute against Member C's buy order at 10.00 on the other exchange.
> - Since Member C was not informed of its execution on IEX, its order at 10.00 on the other exchange is executed by the IEX BD Router before Member C can update the price to 9.99.
>
> [Emphasis added.]

It seems Member C in this example has at least two buy orders in the market, one on IEX and one on another exchange. If its order on IEX is executed Member C wants to immediately cancel its order on the other exchange, and Hudson River seems outraged it might not be able to do so because of how IEX will work. But first, if this is Member C's business model, in what sense does Member C have any intent at all to trade *both* orders at a price of 10.00 when it submits them - how are both orders *bona fide* orders Member C fully intends to trade? And how are these orders representative of actual supply and demand? Isn't Member C submitting, as BATS wrote in a recent enforcement case, "non-bona fide orders with the intention of cancelling those orders [the order on the away exchange] once they have triggered some type of market movement and/or response from other market participants [the IEX execution], from which the market

[12] Letter to Brent J. Fields, Secretary, SEC, from Adam Nunes, Head of Business Development, Hudson River Trading, December 4, 2015.

[13] Hudson River Trading has described itself as "a quantitative trading firm that develops automated trading strategies that provide liquidity and facilitate price discovery on exchanges and Alternative Trading Systems." The firm is a founding member of the Modern Markets Initiative, a high frequency trading industry trade group. In 2014 the Wall Street Journal wrote the firm accounted for "more than 5% of U.S. stock transactions on most days."

manipulator might benefit by trading certain other bona fide orders [any new orders at a worse price]"? Now, what kind of firm do we imagine Member C to be?

BATS has lectured the SEC why it believes Reg NMS contributes to market complexity, but BATS should consider instead how tolerating this kind of HFT behavior contributes to market complexity, and how its own four stock exchanges could be a prime example. Chair White's troubled Equities Market Structure Advisory Committee has been the forum this year for self-interested incumbents to blame Reg NMS for market fragmentation, though evidence for that wilts to the touch.[14] If the EMSAC is genuinely worried about fragmentation, the EMSAC should put HFT spoofing on the agenda.

The problem for HFT market maker firms is to distinguish what they do when they "offer more liquidity than they're prepared to trade in one go" from spoofing. Public markets and investors are regularly harmed by what they do. Any attempt by the industry, or an exchange founded by and dependent on the industry, to preemptively define spoofing narrowly - whatever it's called - should be viewed very skeptically. Because its planned IPO might aggravate whatever conflicts there may be between its regulatory responsibilities and its responsibilities to shareholders, it would be very instructive to hear what BATS regulators think about how HFT market makers behave before BATS sells any shares to the public. Other regulators have been very clear what they think.[15] If BATS can't or won't do it, the SEC should do it.

Before BATS takes on spoofing, BATS must amend its Filing to include a principle. That's how to make markets better. Some excellent language would be something like this:

> No Member shall enter or cause to be entered, an order with the intent, at the time of order entry, to cancel the order before execution, or to modify the order to avoid execution.[16]

And then in its rule interpretations BATS must be clear that whatever its checklists say, they aren't comprehensive, and any behavior violating the principle will be sanctioned.

Sincerely,

R. T. Leuchtkafer

[14] Letter to Brent J. Fields, Secretary, SEC, from R. T. Leuchtkafer, May 6, 2015.
[15] "France Fines Euronext, Virtu for Stock Manipulation in 2009," Bloomberg, December 8, 2015.
[16] "Investors Exchange Rulebook," August 20, 2015, available at www.iextrading.com.