

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

U.S. COMMODITY FUTURES)	
TRADING COMMISSION,)	
)	
Plaintiff,)	
)	No. 15-CV-9196
v.)	
)	Hon. Amy J. St. Eve
IGOR B. OYSTACHER and)	
3 RED TRADING LLC,)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

AMY J. ST. EVE, District Court Judge:

Plaintiff U.S. Commodity Futures Trading Commission (the “CFTC”) has moved the Court to enjoin Defendants Igor B. Oystacher (“Oystacher”) and 3Red Trading, LLC (“3Red”) (collectively, “Defendants”) from committing further violations of the Commodities Exchange Act and to bar Oystacher from trading certain commodity futures. [20]. Defendants object, arguing that the CFTC has failed to meet its burden under applicable law. [90]. The Court held an eight-day preliminary injunction hearing. After considering all of the evidence, including witness testimony, expert reports, and exhibits, the Court denies the CFTC’s motion for the reasons discussed in detail below. The Court, however, imposes the restrictions set forth in detail below on Defendants.

BACKGROUND

The CFTC is an independent federal regulatory agency that is responsible for administering and enforcing, in part, Section 747 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and associated regulations under 17 C.F.R. §§ 1 *et seq.* (2014).

(R. 1, Complaint, at ¶ 11.) Igor B. Oystacher is the founder, President, and Chief Executive Officer of 3Red Trading LLC, a proprietary figures trading company incorporated under Delaware law and located in Chicago, Illinois. (*Id.* at ¶¶ 12–13.) Oystacher is 3Red’s principal trader and was its principal and majority owner during the relevant time period. (*Id.*)

I. The CFTC’s Claims Against Defendants

The CFTC asserts that from December 2011 through at least February 2016, Defendants “intentionally and repeatedly engaged in a manipulative and deceptive spoofing scheme while placing orders for and trading futures contracts on multiple registered entities.” (*Id.* at ¶ 2.) Specifically, the CFTC alleges that Defendants “manually plac[ed] large (at least doubling the number of contracts offered or bid at those price levels, or better) passive order(s) on one side of the market at or near the best bid or offer price, which were intended to be canceled before execution.” (*Id.* at ¶ 3.) To complete the scheme, Defendants would then “cancel or attempt to cancel all of the spoof order(s) before they were executed and virtually simultaneously ‘flip’ their position from buy to sell (or vice versa) by placing at least one aggressive order on the other side of the market at the same or better price to trade with market participants that had been induced to enter the market by the spoof orders they just canceled.” (*Id.*) Ultimately, the CFTC alleges that Defendants’ “scheme created the appearance of false market depth that Defendants exploited to benefit their own interests, while harming other . . . participants” across a number of markets in violation of Sections 4c(a)(5)(C) and 6(c)(1) of the Commodities Exchange Act (the “CEA”), 7 U.S.C. §§ 6c(a)(5)(C) & 9(1) (2012), and CFTC Regulation 180.1 (the “CFTC Regulation”), 17 C.F.R. §180.1 (2014). (*Id.* at ¶¶ 2, 6.)

In 2010, Section 747 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376 (2010) amended Section 4c(a)(5)(C) of the CEA, entitled “Disruptive Practices,” to provide, in relevant part, as follows:

(5) It shall be unlawful for any person to engage in any trading, practice, or conduct on or subject to the rules of a registered entity that –

(C) Is, is of the character of, or is commonly known to the trade as, “spoofing” (bidding or offering with the intent to cancel the bid or offer before the execution).

7 U.S.C. § 6c(a)(5)(C). According to 2013 CFTC interpretive guidance, “[a] section 4c(a)(5)(C) violation occurs when the trader bids or offers with the intent to cancel a bid or offer before execution.” *Interpretative Guidance and Policy Statement on Disruptive Practices*,

Commodities Futures Trading Commission, at 2, available at

http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/dtpinterpretiveorder_ga.pdf

(last visited July 12, 2016). Further, in May 2013, the CFTC provided the following additional “[i]nterpretive guidance and policy statement[s]” regarding, in relevant part, “spoofing” under CEA section 4c(a)(5)(C):

The Commission interprets a CEA section 4c(a)(5)(C) violation as requiring a market participant to act with some degree of intent, or *scienter*, beyond recklessness to engage in the “spoofing” trading practices prohibited by CEA section 4c(a)(5)(C). Because CEA section 4c(a)(5)(C) requires that a person intend to cancel a bid or offer before execution, the Commission does not interpret reckless trading, practices, or conduct as constituting a “spoofing” violation. Additionally, the Commission interprets that a spoofing violation will not occur when the person’s intent when cancelling a bid or offer before execution was to cancel such a bid or offer as part of a legitimate, good-faith attempt to consummate a trade. Thus, the commission interprets the statute to mean that a legitimate, good-faith cancellation or modification of orders (e.g., partially filled orders or properly placed stop-loss orders) would not violate section CEA [sic] 4c(a)(5)(C). However, the Commission does not interpret a partial fill as automatically exempt from being classified as “spoofing” and violating CEA section 4c(a)(5)(C).

When distinguishing between legitimate trading (such as trading involving partial executions) and “spoofing,” the Commission intends to evaluate the market context, the person’s pattern of activity (including fill characteristics), and other relevant facts and circumstances. For example, if a person’s intent when placing a bid or offer was to cancel the entire bid or offer prior to execution and not attempt to consummate a legitimate trade, regardless of whether such bid or offer was subsequently partially filled, that conduct may violate CEA section 4c(a)(5)(C).

The Commission interprets and intends to apply CEA section 4c(a)(5)(C) as covering bid and offer activity on all products traded on all registered entities, including [designated contract markets] and [swap execution facilities]. The Commission further interprets CEA section 4c(a)(5)(C) to include all bids and offers in pre-open periods or during other exchange-controlled trading halts. As noted earlier, the Commission does not interpret CEA section 4c(a)(5)(C) as restricting “spoofing” violations to trading platforms and venues only having order book functionality. “Spoofing” may possibly occur on any trading platform or venue where a market participant has the ability to either (a) send executable bids and offers to market participants or (b) transact against resting orders.

The Commission provides four non-exclusive examples of possible situations for when market participants are engaged in “spoofing” behavior, including: (i) submitting or cancelling bids or offers to overload the quotation system of a registered entity, (ii) submitting or cancelling bids or offers to delay another person’s execution of trades, (iii) submitting or cancelling multiple bids or offers to create an appearance of false market depth, and (iv) submitting or cancelling bids or offers with intent to create artificial price movements upwards or downwards. The Commission also does not intend to apply the “spoofing” provision as covering market communications such as authorized pre-trade communications.

As with other intent-based violations, the Commission intends to distinguish between legitimate trading and “spoofing” by evaluating all of the facts and circumstances of each particular case, including a person’s trading practices and patterns. The Commission does not interpret a CEA section 4c(a)(5)(C) violations as requiring a pattern of activity; the Commission interprets CEA section 4c(a)(5)(C) such that even a single instance of trading activity can violate CEA section 4c(a)(5)(C), provided that the activity is conducted with the prohibited intent.

Antidisruptive Practices Authority, 78 Fed. Reg. 31890, 31896 (May 28, 2013) *available at*

<http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2013-12365a.pdf>.

On July 14, 2011, the CFTC adopted CFTC Regulation 180.1(a)(1) pursuant to the CFTC's expanded anti-fraud and anti-manipulation authority under Section 753 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376 (2010). CFTC Regulation 180.1(a)(1) provides, in relevant part, as follows:

(a) It shall be unlawful for any person, directly or indirectly, in connection with any swap, or contract of sale of any commodity in interstate commerce, or contract for future delivery on or subject to the rules of any registered entity, to intentionally or recklessly:

(1) Use or employ, or attempt to use or employ, any manipulative device, scheme, or artifice to defraud[.]

17 C.F.R. § 180.1(a)(1); *see also* *CFTC v. Kraft Foods Group, Inc.*, Case No. 15 C 2881, 2015 WL 9259885, at *6 (N.D. Ill. Dec. 18, 2015) (“In publishing Regulation 180.1, the CFTC explained that ‘Final Rule 180.1 prohibits fraud and fraud-based manipulations.’”) (citing *Final Rule*, 76 Fed. Reg. at 41,400; 17 C.F.R. § 180.1).

According to the CFTC, Defendants “engaged in manipulative or deceptive trading strategies that spoofed various markets while placing orders for, and trading futures contracts through, accounts owned by [Defendants] during the relevant period[.]” (R.1 at ¶ 52.) The CFTC contends that Defendants engaged in these illegal trading schemes in the following markets: the Commodity Exchange, Inc.’s (“COMEX”) High Grade Copper Futures Contracts market (the “Copper market”) in December 2011, the New York Mercantile Exchange’s (“NYMEX”) Light Sweet Crude Oil Futures Contracts market (the “Crude Oil market”) in May 2012, the NYMEX’s Henry Hub Natural Gas Futures Contracts market (the “Natural Gas market”) in November and December 2012, the Chicago Board Options Exchange’s (“CBOE”) Volatility Index Futures Contracts market (the “VIX market”) in February and March 2013, the Chicago Mercantile Exchange’s (“CME”) E-Mini Standard & Poor’s 500 Stock Price Index

Futures Contracts market (the “ES market”) in June and December 2013 and January 2014, and the CME’s Ten Year T-Note Treasury Futures market (“ZN market”) in February 2016. (*Id.* at ¶ 4; R. 72 at 4.) Specifically, the CFTC contends that Defendants’ deceptive misconduct followed the following pattern across all relevant markets:

- 1) placing at least one, and in many instances multiple “spoof orders” on one side of the market with the intent to cancel these orders before execution;
- 2) placing these orders at or near the best bid or offer price as passive orders, behind existing orders;
- 3) placing these orders for large numbers of contracts, at least doubling the number of contracts offered or bid at those price levels or better, to create the false impression of market depth and book pressure on that side of the market, in order to induce other market participants (including both manual traders and those using computer algorithms to make trading decisions) to place orders on the same side of the market;
- 4) canceling all of the spoof order(s) simultaneously within one second of entry, largely before they could execute;
- 5) using the “avoid orders that cross” functionality to place “flip” order(s) as aggressive order(s) which would simultaneously (within 5 milliseconds) cancel any opposite order(s) at the same or better price. The aggressive flip order(s), except in one instance, then traded against market participants that had joined the “spoof orders” before those market participants could assess and react to the updated market information; and
- 6) often placing the aggressive flip orders as partially visible “iceberg” orders to maximize the likelihood they would be filled.

(*Id.* at ¶ 54.)

II. The Charged Trades

The CFTC’s Complaint (the “Complaint”) charges Defendants with (1) spoofing the futures market in violation of Section 4c(a)(5)(C) of the CEA and (2) employing a manipulative device, scheme, or artifice in violation of Section 6(c)(1) of the CEA and CFTC Regulation 180.1. (R. 1, Complaint, at 30–33.) Specifically, Count One charges Defendants with engaging

in spoofing during the relevant period by, among other things, bidding or offering with the intent to cancel the bid or offer before execution, while placing orders during the relevant period, including the following orders . . . :

- (a) at least 1,633 orders in the COMEX copper contract on Globex with the intent to cancel the orders before execution on December 1, 2, 5-9, 12-16, 19, and 20, 2011.
- (b) at least 1,102 orders in the NYMEX crude oil contract on Globex with the intent to cancel the orders before execution, on May 7 and 9-11, 2012.
- (c) at least 1,574 orders in the NYMEX natural gas contract on Globex with the intent to cancel the orders before execution, on November 30 and December 3-4, 2012.
- (d) at least 284 orders in the CFE VIX contract with the intent to cancel the orders before execution, on February 19-22, 25-28 and March 1, 4-7, 11-12, 18-21, 2013.
- (e) at least 614 orders in the CME E-Mini S&P 500 contract on Globex with the intent to cancel the orders before execution, on June 11 and 12, 2013, as well as December 16-19, 2013 and January 6-10, 2014.

(*Id.* at 30–31.) In addition, Count Two charges Defendant with employing or attempting to use or employ

[a] manipulative or deceptive device, scheme, or artifice to defraud, by placing passive orders for a large number of contracts on one side of the market to create the false impression of increased market depth and book pressure in order to fraudulently and manipulatively induce other market participants to place orders for contracts at levels that they would not have placed but for the spoof orders. [Defendants] then misused the avoid orders that cross functionality to virtually simultaneously cancel their spoof orders and flip to aggressively take the other side of the market (and trade with market participants induced to place orders similar to the spoof orders before other market participants became aware that they were spoof orders.) Defendants did this during the relevant time period, including:

- (a) at least 288 times in the COMEX copper market on December 1, 2, 5-9, 12-16, 19, and 20, 2011.
- (b) at least 324 times in the NYMEX crude oil market on May 7 and 9-11, 2012.

- (c) at least 330 times in the NYMEX natural gas market on November 30 and December 3-4, 2012.
- (d) at least 89 times in the CFE VIX market on February 19-22, 25-28, and March 1, 4-7, 11-12, 18-21, 2013.
- (e) at least 285 times in the CME E-Mini S&P 500 market on June 11 and 12, 2013, as well as December 16-19, 2013 and January 6-10, 2014.

(*Id.* at 32.)

III. The Hearing

Beginning on April 25, 2016, the Court held an eight-day hearing on the CFTC’s motion. During the hearing, the CFTC called the following witnesses to testify: Richard May,¹ the head of fixed income currencies and commodities proprietary trading for Citadel Securities; Matthew Wasko, the former head futures trader with CGT Analytics of HTG Capital Partners; Karen Christiansen, the Vice President of Regulatory Systems Development for the CBOE and former Chief Regulatory Officer for the CBOE Futures Exchange (“CFE”); Karsten Hiestermann, the head of the Exchange Supervisory Authority for the Ministry of Economics of the State of Hesse, Germany; Steve Strohmer, 3Red’s Chief Operating Officer; Defendant Igor Oystacher; Joy McCormack, a Senior Futures Trading Investigator with the CFTC; and Professor Hendrik Bessembinder, the CFTC’s expert witness who is a Professor of Finance at Arizona State University. Defendants called Gregory O’Connor, 3Red’s Chief Compliance Officer, and Professor Daniel R. Fischel, Defendants’ expert witness who is a Professor of Law and Business at the University of Chicago Law School and the President of Compass Lexecon, a consulting firm specializing in the application of economics to legal and regulatory issues.

¹ Due to scheduling issues, the Court heard Richard May’s testimony on April 8, 2016.

LEGAL STANDARD

“Pursuant to section 6c of the Commodity Exchange Act, 7 U.S.C. § 13a–1, the Commodity Futures Trading Commission is authorized to institute an action seeking injunctive relief[.]” *CFTC. v. Hunt*, 591 F.2d 1211, 1219 (7th Cir. 1979); *see also CFTC v. Sarvey*, No. 08 C 192, 2012 WL 426746, at *5 (N.D. Ill. Feb. 10, 2012) (“Section 6c(a) of the [CEA] permits the Court to enjoin [Defendant] from violating the [CEA] or CFTC regulations in the future.”) (citing 7 U.S.C. § 13a–1(a)). Specifically, Section 13a-1 of the CEA provides, in relevant part, the following:

- (a) Whenever it shall appear to the Commission that any registered entity or other person has engaged, is engaging, or is about to engage in any act or practice constituting a violation of any provision of this chapter or any rule, regulation, or order thereunder, or is restraining trading in any commodity for future delivery or any swap, the Commission may bring an action in the proper district court of the United States or the proper United States court of any territory or other place subject to the jurisdiction of the United States, to enjoin such act or practice, or to enforce compliance with this chapter, or any rule, regulation or order thereunder, and said courts shall have jurisdiction to entertain such actions: *Provided*, That no restraining order (other than a restraining order which prohibits any person from destroying, altering or disposing of, or refusing to permit authorized representatives of the Commission to inspect, when and as requested, any books and records or other documents or which prohibits any person from withdrawing, transferring, removing, dissipating, or disposing of any funds, assets, or other property, and other than an order appointing a temporary receiver to administer such restraining order and to perform such other duties as the court may consider appropriate) or injunction for violation of the provisions of this chapter shall be issued ex parte by said court.
- (b) Upon a proper showing, a permanent or temporary injunction or restraining order shall be granted without bond.

7 U.S.C. § 13a–1(a)–(b). “The discretion afforded the district court in deciding whether to issue such relief . . . [is] broad.” *Hunt*, 591 F.2d at 1219 (citing *United States v. W. T. Grant*, 345 U.S. 629, 633–34, 73 S. Ct. 894, 97 L. Ed. 1303 (1953) (noting that the court’s injunctive “decision is

based on all the circumstances; [her] discretion is necessarily broad and a strong showing of abuse must be made to reverse it’’).

Importantly, statutory injunctive relief differs from traditional equitable injunctive relief. Indeed, “when Congress has integrated traditional modes of equitable relief into a statutory enforcement scheme, the court’s equitable power should be exercised in harmony with the overall objectives of the legislation.” *Id.* (citing *SEC v. Advance Growth Capital Corp.*, 470 F.2d 40, 53 (7th Cir. 1972)). Further, “[a]ctions for statutory injunctions need not meet the requirements for an injunction imposed by traditional equity jurisprudence.” *Id.* at 1220; *see also CFTC v. Lake Shore Asset Mgmt. Ltd.*, 496 F.3d 769, 772 (7th Cir. 2007) (“Section 13a–1(a) . . . authorizes district courts to enjoin acts or practices that violate the Commodity Futures Act and the CFTC’s regulations. . . . Such a statute alters the common law—for example, it dispenses with the need to show irreparable injury[.]”) (citing *Hunt*, 591 F.2d at 1220). Specifically, “[i]n an action for a statutory injunction, once a violation has been demonstrated, the moving party need only show that there is a reasonable likelihood of future violations in order to obtain relief.” *SEC v. Holschuh*, 694 F.2d 130, 144 (7th Cir. 1982) (footnote omitted) (citing *Hunt*, 591 F.2d at 1220); *see also Fed. Trade Comm. v. Lifewatch, Inc.*, ___ F. Supp. 3d ___, No. 15 C 5781, 2016 WL 1315063, at *23 (N.D. Ill. Mar. 31, 2016) (citing *United States v. Kaun*, 827 F.2d 1144, 1148 (7th Cir. 1987)). Put differently, the movant must demonstrate 1) a violation of CEA section 4c(a)(5)(C) or of CFTC Regulation 180.1(a)(1), as alleged in the two-count Complaint, and 2) a reasonable likelihood of future violations.

First, the CFTC must “demonstrate[.]” that Defendants have committed a “violation” of the CEA or the CFTC’s Regulations. “A prima facie case of illegality is sufficient.” *CFTC v.*

Garofalo, No. 10 C 2417, 2010 WL 11245430, at *2 (N.D. Ill. Dec. 21, 2010) (citing *CFTC v. Muller*, 570 F.2d 1296, 1300 (5th Cir. 1978)).

Second, the CFTC must show that there is a “reasonable likelihood” that Defendants will engage in “future violations.” *Hunt*, 591 F.2d at 1220. “The purpose of injunctive relief is, after all, not to punish but to deter future violations, thus insuring general compliance with the broad remedial design of the legislation.” *Advance Growth Capital, Corp.*, 470 F.3d at 54 (citing *Hecht Co. v. Bowles*, 321 U.S. 321, 329, 64 S. Ct. 587, 88 L. Ed. 754 (1944)) (“The historic injunctive process was designed to deter, not to punish.”). While past misconduct can be “highly suggestive of the likelihood of future violations, . . . the court should look to the ‘totality of the circumstances’” to determine whether such a likelihood exists. *Hunt*, 591 F.2d at 1220 (quoting *SEC v. Mgmt. Dynamics, Inc.*, 515 F.2d 801, 807 (2d Cir. 1975)).

Defendants’ argument for a heightened preliminary injunction standard is unavailing. Specifically, Defendants argue that the Court should follow the Second Circuit’s injunction analysis in *SEC v. Unifund SAL*, 910 F.2d 1028, 1039 (2d Cir. 1990). (R. 90 at 36–38.) In *Unifund*, Defendants argue, the Second Circuit held that “what constitutes a ‘proper showing’ is determined by the nature and scope of the requested injunction.” (*Id.* at 36, citing *Unifund*, 910 F.2d at 1039.) Defendants further assert that, as the petitioners in *Unifund* sought to prohibit “future violations,” the court required them to make a “‘more persuasive’ and ‘more substantial showing . . . both as to [the purported] violation and [its] risk of recurrence.’” (*Id.* at 36–37, citing *Unifund*, 910 F.2d at 1041.) Thus, Defendants conclude, “[t]his Court should do the same.” (*Id.* at 38.)

The Seventh Circuit, however, has not adopted the Second Circuit’s injunction standard from *Unifund*. In fact, as Defendants point out, this Circuit has explicitly left the “[*Unifund*]

question for another day.” *SEC v. Cherif*, 933 F.2d 403, 408 n.1 (7th Cir. 1991). Indeed, “neither the Seventh Circuit nor any district court in this Circuit has endorsed *Unifund*’s reasoning.” *Garofalo*, 2010 WL 11245430, at *6 (citing *Cherif*, 933 F.2d at 408 n.1). Further, Defendants’ citations to six other district courts in an attempt to illustrate that “[c]ourts in sister circuits have faithfully applied [*Unifund*’s heightened standard]” is unpersuasive. (R. 90, Def. Response, at 37.) A number of other circuits have opted *not* to follow *Unifund*, instead applying the default standard the Seventh Circuit employs. *See SEC v. Fife*, 311 F.3d 1, 8 (1st Cir. 2002) (refusing to apply the Second Circuit’s statutory-injunction standard as defined in *Unifund*) (citing *Unifund*, 910 F.2d at 1036–37); *see also CFTC v. Hunter Wise Commodities, LLC*, 749 F.3d 967, 974 (11th Cir. 2014) (“Binding precedent in this circuit suggests, and other circuits have held, that where the [CFTC] seeks to enjoin future violations, it must also show a reasonable likelihood of future violations in addition to a prima facie case of illegality.”) (citing *Muller*, 570 F.2d at 1300); *CFTC v. Co Petro Mktg. Grp.*, 680 F.2d 573, 582 n.16 (9th Cir. 1982); *Hunt*, 591 F.2d at 1220. As a result, the Court adheres—as it must—to this Circuit’s two-pronged approach toward statutory-injunctions, requiring the CFTC to show 1) a prima facie violation and 2) a “reasonable likelihood” of future violations.

ANALYSIS

I. Factual Findings

The Court carefully assessed the testimony and demeanor of each witness during the hearing and makes its factual findings below. The findings are based on the testimony from the hearing, the extensive exhibits admitted into evidence during the hearing, and the exhibits provided with the briefing.

A. Defendants 3Red Trading LLC and Igor B. Oystacher

Defendant 3Red Trading LLC is a “proprietary trading firm” currently employing “about 35” employees. (Preliminary Injunction Hearing Transcript (“Tr.”) at 2030.) 3Red employs both manual traders—where humans make trading decisions—and algorithmic traders—where computer algorithms make trading decisions. (*Id.* at 2037.) 3Red currently trades in five of the six charged futures markets including the ES, ZN, VIX, Crude Oil, and Natural Gas markets. (*Id.* at 2040.) Steve Strohmer has worked at 3Red since April 2011 and currently serves as the firm’s Chief Operating Officer. (*Id.* at 1264.) Gregory O’Connor has served as 3Red’s Chief Compliance Officer since July 2013. (*Id.* at 2030.) As 3Red’s Chief Compliance Officer, Mr. O’Connor, in relevant part, oversees compliance for the firm, handles external and internal inquiries, analyzes 3Red traders’ trading, speaks with regulators, and serves as a liaison for any compliance-related purposes. (*Id.*)

Defendant Igor B Oystacher established 3Red in early 2011. (*Id.* at 563.) Defendant Oystacher immigrated to the United States from Russia at around fifteen years old and attended Northwestern University before dropping out after an internship at Gelber Group, a former trading firm. (*Id.* at 924–25.) Defendant Oystacher then worked at Gelber Group for nearly a decade, trading on futures markets and, eventually, managing ten other traders. (*Id.* at 927–28.) Currently, Defendant Oystacher serves as 3Red’s President, Chief Executive Officer, and principal trader. (*Id.* at 563; *Id.* at 726.) During the relevant time period, Defendant Oystacher was a principal and majority owner of 3Red. (R. 1 at ¶ 12.)

Defendant Oystacher is a manual trader. (Tr. at 928.) As such, he manually executes trades based on his own observations. (*Id.* at 928–29.) To aid his manual trading, he uses a computer mouse that places pre-configured contract quantities depending on which buttons he

clicks. (*Id.* at 966–67.) Specifically, the left button on Defendant Oystacher’s mouse submits larger orders, while the right button submits smaller orders. (*Id.*) These amounts vary depending on which markets Defendant Oystacher trades in. (*Id.* at 967.) In addition, Defendant Oystacher utilizes a “randomizer tool” that randomizes the contract quantities he orders by either adding or subtracting a small amount each time he places an order. (*Id.* at 989.) Since 2011, Defendant Oystacher has traded on the following markets: the COMEX’s Copper market, the NYMEX’s Crude Oil market, the NYMEX’s Natural Gas market, the CBOE’s VIX market, the CME’s ES market, and the CME’s ZN market. (R. 1 at ¶ 4; R. 72 at 4.) Currently, Defendant Oystacher only trades on two of the six charged markets—the CME’s ES market and ZN market. (Tr. at 930.)

B. Algorithmic Traders Versus Manual Traders

The futures market consists of both algorithmic, or automated, traders and manual traders. Indeed, “futures markets appear to provide an environment conducive to both manual and automated participants, where each often plays both common and distinctive roles.” (Def. Exh. D55, Richard Haynes & John S. Roberts, *Automated Trading in Futures Markets*, Mar. 13, 2015, at 2.) Defendant Oystacher, as noted above, is a manual trader. Specifically, he manually makes trading decisions and enters individual trades using a computer mouse as opposed to a computer software or algorithm. (Tr. at 928–29.) Algorithmic traders, however, “rely on computer software to monitor market conditions and to submit and cancel orders.” (R. 20-4, CFTC Exh. 94, at 7.) According to Professor Bessembinder, “[t]he literature has documented that a substantial proportion (in many cases the majority) of order and trading activity in modern electronic financial markets is attributable to ‘algorithmic traders[.]’” (*Id.*); *see also* (Def. Exh. D55, Richard Haynes & John S. Roberts, *Automated Trading in Futures Markets*, Mar. 13, 2015,

at 1) (“Recent studies on automated trading in domestic markets have found that often over half of the trades on securities and futures exchanges make some use of algorithms . . . to match trades, oversee certain order types (e.g. stop orders)[,] and monitor general market risk.”)

“Algorithmic traders include a variety of participants, ranging from brokerage firms who seek favorable trade executions on behalf of clients entering long-term investment positions or hedges to proprietary firms who trade on a principal basis in pursuit of short-term profit opportunities.”

(Id.)

C. The CFTC’s Market Witnesses

The CFTC presented, in part, both market witnesses and exchange regulators. Richard May of Citadel and Matthew Wasko of HTG Capital Partners are market participants who experienced declines in profitability in certain futures markets, observed what they believed was spoofing, and filed complaints with the CFTC. Karen Christiansen and Karsten Hiestermann are exchange regulators who both received various market participant complaints and oversaw investigations into Defendants’ trading behavior.

1. Richard May

Richard May is the head of fixed income currencies and commodities proprietary trading for Citadel Securities (“Citadel”), where he has worked for almost twelve years. (Tr. at 5.)

Citadel operates as a liquidity provider for the capital markets. *(Id.)* Before working at Citadel, Mr. May received both a Bachelor’s and Master’s degree in Computer Science from Stanford University. *(Id.)* At Citadel, Mr. May, who is very experienced in trading, manages a team of “quants,” or quantitative analysts, who look through market data to develop trading algorithms and strategies. *(Id.)* Mr. May is highly intelligent and was a very credible witness.

Citadel’s trading algorithms rely, in part, on the data the exchange distributes to all market participants. (*Id.* at 18.) First, market participants, anonymous to all other participants in the market, submit orders to an exchange’s order gateways either manually or automatically through automated trading systems. (*Id.* at 7.) The exchange’s order gateways then transmit those orders into a matching engine that aggregates the orders from across the market. (*Id.*) The matching engine then matches orders to buy with orders to sell at the same price, following a “first in, first out” priority. (*Id.* at 7–8.) In other words, the engine first matches and executes orders with the earliest timestamps while later orders “rest” in a queue. Finally, the matching engine has a market data engine that distributes information back to market participants, such as order matches and executions, cancellations, changes in quantities, or changes in prices. (*Id.* at 8.) The exchanges distribute this data through the market data feed, and participants view it using a price ladder—a market’s order book of buy and sell orders arranged by price, as displayed below. (*Id.* at 12; CFTC Exh. 1.)

eCBOT-A ZN MAR07 [Window Controls]

13:26:08 [Up Arrow]

-295				07210	103	48
<Default>				07205	103	2
11872				07200	154	
-9				07195	154	7
0				07190	154	63
1	5			07185	154	23
10	20			07180	156	
50	100			07175	147	15
CLR	S 0 W 5	353		07170	409	5 1
0	B 0 W 20			07165	6	50
SL	SM			173	07160	8
				51	07155	1
Limit				76	07150	
Del All				51	07145	
Delete 5				44	07140	
Delete 20				51	07135	
				51	07130	
Liquidate				49	07125	
				47	07120	

U.S. Pat. 6,766,304,
6,772,132... [Down Arrow]

Specifically, Citadel’s trading strategies tend to look at “three key factors”: 1) relative value, 2) book pressure, and 3) trade flow. (*Id.* at 16–17.) Relative value refers to whether two similar products are trading at the same price relative to each other. (*Id.* at 17.) Book pressure measures whether there exists more buying or selling interest in the market for a particular product, using the number of orders at each price level in the order book on both the buy and sell sides. (*Id.*) Trade flow refers to the actual trades that are filled between buyers and sellers and, specifically, the prices at which those trades occurred. (*Id.*)

Among other markets, Mr. May and Citadel trade on the ES Market. The ES market contracts are “the most liquid equity index futures in the world,” meaning this market has the largest volume of contracts traded a day. (*Id.* at 20.) Citadel is “one of the largest traders in the world on the ES market.” (*Id.*) Indeed, it is “in the top five” of all market participants trading in this market. (*Id.*) The ES market futures contracts “settle[] financially against the price of the S&P 500 index at the end of every quarter. The price ladder increments are 25 cents apiece, and the multiplier on it is 50.” (*Id.*) Put differently, one’s net gain or loss in this market is equal to the difference between one’s buy and sell prices, multiplied by fifty.

In his role as a trader, Mr. May became familiar with the term “spoofing”² in the context of trading commodity futures. (*Id.* at 27.) Specifically, his team used this term to describe when people were “adding non-genuine size into the book in order to misrepresent true buying and selling interest of the market.” (*Id.* at 42.)

In 2013, Mr. May and his team observed what they believed was spoofing in the ES market. Around this time, they noticed a significant decline in Citadel’s profitability. (*Id.* at 23.)

² The Court does not view Mr. May’s testimony regarding “spoofing” as an expert opinion or as a legal conclusion. Instead, the Court accepts his testimony as that of a layperson with extensive experience in futures trading and as to what he understood spoofing to be in the context of his job at Citadel.

Immediately, Citadel scaled back its participation in the ES market by over fifty percent. (*Id.*) Mr. May's team began investigating the market data to determine why Citadel was experiencing such a decline. (*Id.*) To do so, the team reviewed previous trades and the surrounding historical market circumstances. Initially, they noticed large order entries on one side of the market followed by a cancellation. (*Id.*) The cancellation was almost immediately followed by a trade on the opposite side of the market that would match with, and take out, the remaining orders from other market participants who had responded to the initial large order entry. (*Id.*) According to Mr. May, the order entries and cancellations "were very large. Much larger than the norm we had been used to seeing." (*Id.*) Consequently, his team investigated further.

Eventually, Mr. May's team developed a program to detect this behavior on a more automated basis in an effort to determine whether this was "a new phenomenon or something that had always been there that [they] hadn't previously seen." (*Id.* at 23–24.) The team named the program the "Pull-Swipe Detector," as it would detect a market participant "pulling the size showing and then swiping to take out the remaining size." (*Id.* at 24.) Put differently, the tool searched for instances of large order cancellations followed by quick trades on the opposite side at the same price. (*Id.* at 24–27.) Specifically, Citadel's Pull-Swipe Detector flagged order entries where 1) over fifty percent of the total display size on one side of the market was cancelled just before 2) a trade of at least two hundred contracts was entered on the opposite side—a "fairly large trade" relative to the "size showing at the top of the book," according to Mr. May. (*Id.* at 28–29.)

Ultimately, Mr. May's "Pull Swipe Detector" flagged a number of trades that met these parameters across both the ES and Eurex markets from June 2013 to early 2014. This data led the team to "believe that the size being added was not genuine size; that it did not truly reflect

buying and selling interest; that perhaps these orders were fake.” (*Id.* at 24.) They believed the market participant did not intend to execute the trades for a number of reasons: 1) the size of the initial orders accounted for more than the rest of the market combined; 2) the time between the cancellation of the large order sizes and the opposite-side trades was so short that it led them to believe a single participant was responsible; 3) the initial large orders were not at the top of the order book long enough to fill; and 4) there was a pattern of flips from the buy side to the sell side (or vice versa) that occurred much quicker than one would expect given the large size of the orders entered. (*Id.* at 24–25.)

Although Mr. May’s team did not calculate the specific damages, it knew this pattern of behavior was problematic for Citadel’s trading strategies. (*Id.* at 50.) Indeed, as noted above, Citadel’s strategies relied, in part, on book pressure, which is determined by the buying and selling interest displayed in the market. (*Id.* at 50.) Here, Citadel felt that the market participant responsible for such large cancellations and flips was aiming to mislead other participants about the number of buyers and sellers in the market. (*Id.* at 26, 50.) As such, Mr. May believed this behavior could mislead Citadel’s algorithms into buying or selling based on artificial information. (*Id.* at 26, 50.) Consequently, Mr. May continued to scale back Citadel’s trading activity by up to fifty percent in these markets. “This resulted in a loss of opportunity and trading losses approximating over six figures per day on trading days on which the spoofer was active or on which we let the algorithms stay scaled down between September 2013 and December 2013. To put that in context, during this period, the spoofing activity cost Citadel millions of dollars and Citadel did less than 50% of its normal market share.” (R. 20-5, May Afdvt., at ¶ 24.)

In January 2014, Citadel filed a complaint with the CFTC based, in large part, on Mr. May's Pull-Swipe Detector data. (Tr. at 51–52.) Around this time, Citadel also filed a complaint with the Eurex exchange based on Mr. May's similar observations in that market. (*Id.* at 52.) Neither Mr. May nor Citadel knew the identity of the trader engaging in the conduct. The CFTC, however, determined that Defendant Oystacher was responsible for the trades identified in Citadel's complaint. (*Id.* at 1358.) Soon afterward, in light of the fact that Eurex publicly fined 3Red for similar activity, as described in more detail below, Mr. May's team reduced its Pull-Swipe Detector analysis. (*Id.* at 52.) Mr. May and his team assumed the pattern of behavior would cease in both markets as a result of the public punishment. (*Id.*)

Later, in March 2015, however, Mr. May observed another sudden decline in Citadel's profitability in the ES market. (*Id.* at 53.) Upon further investigation, Mr. May noticed similar trading patterns to those his team had observed in 2013 and 2014. (*Id.*) Accordingly, Mr. May again employed the Pull Swipe Detector. (*Id.*) The CME's latency period, however, had shrunk from around four milliseconds in 2013 to about one millisecond in 2015. (*Id.* at 54.) In other words, it now only took about one millisecond for participants to enter orders and receive data back through the matching engine system detailed above. (*Id.*) In light of this change, Mr. May's team adjusted the Pull-Swipe Detector's parameters such that it would search for orders where the timing between the "pulls" and "swipes", or cancellations and opposite-side trades, was so small that it was virtually simultaneous. (*Id.*) Ultimately, with the change, Mr. May's team discovered a number of instances that mirrored the "pull-swipe" behavior in 2013 and 2014. (*Id.* at 53, 58–59.) Given this pattern, Mr. May believed that this trading behavior was not a result of random chance, but, instead, based on intentional conduct. (*Id.* at 59–60.) As a result, Citadel again reduced its activity in this market by fifteen percent. (*Id.* at 61.) Mr. May

explained that this continued reduction in activity “resulted in trading losses and opportunity costs approximating six figures per day on approximately 50 days during that period. To put that in context, the misconduct cost us millions of dollars.” (R. 20-5, May Afdvt., at ¶ 32.)

Citadel then filed a second complaint detailing this trading behavior with both the CFTC and the Eurex market, based in large part on Mr. May’s data and observations. (Tr. at 62.) As noted earlier, the CFTC identified Defendant Oystacher as the trader responsible for the activity highlighted in Citadel’s complaint. (*Id.* at 1358.)

2. Matthew Wasko

Mr. Matthew Wasko began trading in futures markets in January 2008. (*Id.* at 372.) During the relevant time period, Mr. Wasko was a head futures trader with CGT Analytics (“CGTA”) of HTG Capital Partners—a proprietary trading company that provides capital to other trading groups. (*Id.* at 371–72.) There, Mr. Wasko ran the futures trading desk and worked with CGTA’s software developers to develop new trading algorithms and trading tools. (*Id.* at 372–73.) Under Mr. Wasko, the futures trading desk operated mostly on the CME, trading in the ES market among others. (*Id.* at 373.) CGTA operated as a “market maker,” assessing a product’s fair market value and trading at or near it to collect the “bid-ask spread” on both sides of the market. (*Id.* at 378–79.) CGTA’s trading strategies relied, in part, on the quantity available to trade at each price, the number of participants, and, similar to Citadel, book pressure. (*Id.* at 374–75; R. 20-6, Wasko Afdvt., at ¶¶ 6–7.) Indeed, book pressure was important for CGTA’s algorithms, as “[i]t was a very strong factor . . . in figuring out the supply and demand and the interest at a [price] level in a market.” (*Id.* at 375.)

Mr. Wasko first became aware of the term “spoofing”³ around 2008. (*Id.* at 381.)

Indeed, he observed trading conduct he believed was spoofing on multiple occasions throughout his career as a trader. (*Id.*) Specifically, Mr. Wasko understood spoofing to refer to a trading strategy consisting of three parts:

So the first part, as I said, would be the adding of orders of one or many orders to a price level.

The second part of the strategy would be for all those orders to be cancelled in quick succession to each other in a way that appeared, when looking at the order book and looking at market data, that they happened at the same time.

And the third part of the strategy is to send an aggressive order to that same price level to trade with the remaining quantity that’s there from other market participants.

(*Id.* at 382.)

Beginning around July 2012, Mr. Wasko and his team began to observe “suspicious trading” they believed was spoofing in the ES market. (R. 20-6, Wasko Afdvt., at ¶ 9.) After noticing a decline in profitability, they began reviewing historical trading data from market replays of losing trades. (Tr. at 382–85.) Specifically, Mr. Wasko observed the following trend: 1) several large orders were added, or “stacked,” over time that, in the aggregate, made up a significant percentage of the existing market, 2) all of the orders were cancelled at the same time, despite not being entered at the same time, and, finally, 3) about two to eight milliseconds later, an aggressive order was entered that was large enough to match and execute the remaining orders at the same price as the cancelled orders, but smaller than the total that existed just before the cancellation. (*Id.* at 384–88; R. 20-6, Wasko Afdvt., at ¶ 9, 11–13.) This trading activity was

³ As stated during the hearing, the Court does not view Mr. Wasko’s testimony regarding “spoofing” as an expert opinion or as a legal conclusion. Instead, the Court accepts his testimony as that of a layperson with extensive experience in futures trading and as to what he understood spoofing to be in the context of his job at HTG Capital Partners.

detrimental to CGTA's trading because the initial large orders appeared to its algorithms as genuine interest from multiple market participants, leading CGTA to join that movement and enter orders it intended to trade. (R. 20-6, Wasko Afdvt., at ¶ 11.) Instead, the initial large orders were cancelled and an aggressive order was placed on the opposite side of the market that matched with CGTA's orders before CGTA even realized the initial orders had been cancelled. (*Id.* at ¶ 12; Tr. at 387.) Thus, CGTA lacked enough time to react to the cancellation. (*Id.*; Tr. at 387–88.) Indeed, almost every time this trading activity occurred, CGTA's algorithms were unsuccessful in their own cancellation attempts, as an opposite-side trade had already executed CGTA's orders. (Tr. at 388.)

Mr. Wasko's team observed this behavior sporadically from July 2012 to June 2013. (*Id.* at 388–89; R. 20-6, Wasko Afdvt., at ¶¶ 10–11.) In light of this behavior, Mr. Wasko and his team developed a tool to identify spoofing activity before CGTA's algorithms traded, called the "Detection Algorithm." (R. 20-6, Wasko Afdvt., at ¶ 16.) Mr. Wasko's team ultimately suffered realized losses of approximately one hundred thousand dollars between January 2013 and January 2015. (*Id.* at ¶ 23.) Moreover, CGTA reduced its exposure at the top of the order book in the ES market during this time, sometimes turning the algorithms completely off, leading to significant opportunity cost. (*Id.*)

Given these losses, Mr. Wasko filed a number of complaints with the CME and the CFTC beginning in late 2012. (Tr. at 392.) In May 2013, Mr. Wasko's team gave a presentation to the CME, detailing a number of examples that illustrated the pattern described above based on data collected from the "Detection Algorithm." (*Id.* at 393.) Later, on June 25, 2013, Mr. Wasko filed a complaint with the CFTC that identified examples of this pattern from June 11, 12,

13, and 17, 2013 in the ES market. (*Id.* at 396–401; R. 20-6, Wasko Afdvt., at ¶ 19.)⁴ These examples illustrated behavior that 1) was at the top of the book; 2) occurred when there was no significant activity in the ES market before the cancellation of multiple orders followed by flips; 3) included large initial “stacked” orders that constituted at least twenty-five percent of the volume at the top of the book; 4) included large cancellations, constituting at least twenty-five percent of the top of the book; and 5) demonstrated short cancel-to-flip times that did not allow CGTA to react. (R. 20-6, Wasko Afdvt., at ¶ 17.) The CFTC subsequently identified Defendant Oystacher as the trader responsible for this activity. (Tr. at 1363.)

On January 16, 2014, CGTA sent the CFTC an email with additional examples of the pattern described above from the January 8, 2014 trading day. (R. 20-6, Wasko Afdvt., at ¶ 20; Tr. at 401–04.) Indeed, Mr. Wasko continued to update the CFTC with examples and data throughout 2014. (Tr. at 403–04.) Finally, Mr. Wasko believed the pattern would disappear after the CME announced Rule 575⁵ in September 2014 that explicitly prohibited behavior

⁴ The Court acknowledges that Mr. Wasko is a “whistleblower” in this case in light of his complaint to the CFTC. (Tr. at 394.) As a result, the Court is aware that Mr. Wasko, in light of this status, stands to gain financially if Defendants are ultimately found liable for spoofing the markets. The Court viewed his testimony with this incentive in mind.

⁵ The CME’s Rule 575 provides,

All Orders must be entered for the purpose of executing bona fide transactions. Additionally, all non-actionable messages must be entered in good faith for legitimate purposes.

- (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 or to avoid execution;
- (B) No person shall enter or cause to be entered an actionable or non-actionable message or messages with intent to mislead other market participants;
- (C) No person shall enter or cause to be entered an actionable or non-actionable message or messages with intent to overload, delay, or disrupt the systems of the Exchange or other market participants; and
- (D) No person shall enter or cause to be entered an actionable or non-actionable message with intent to disrupt, or with reckless disregard for the adverse impact on, the orderly conduct of trading or the fair execution of transactions.

similar to what Mr. Wasco’s team observed. (R. 20-6, Wasco Afdvt., at ¶¶ 21–22.) Instead, CGTA’s “Detection Algorithm” continued to observe this pattern in the ES market. (*Id.* at ¶ 22.) Accordingly, Mr. Wasco sent the CME additional examples of the trading behavior described above from September 15 to September 17, 2014. (*Id.*)

3. Karen Christiansen

Karen Christiansen is the Vice President of Regulatory Systems Development for the CBOE. (Tr. at 435.) In part, the CBOE serves as an operator for the CBOE Futures Exchange (“CFE”). (*Id.*) The CFE is an exchange servicing various markets in which participants trade futures products, such as the VIX market. (*Id.* at 436.) The VIX is an index that tracks the volatility, or degree of uncertainty, of future price movements in the ES market. (*Id.* at 436–37.) VIX futures contracts are traded regularly in each of the nine near-term months and, after that, quarterly for five quarters. (R. 1 at ¶ 46.) The contract multiplier for each VIX contract is \$1000, and prices move in increments of .05 points per contract. Put differently, the movement in price of one increment results in a change in the value of the contract by \$50.00. (*Id.* at ¶¶ 46–47.)

Before her role with the CBOE, Ms. Christiansen served as the Chief Regulatory Officer for the CFE. (Tr. at 435, 438.) In that role, Ms. Christiansen “was responsible for ensuring that the Exchange had a regulatory program to fulfill our responsibilities as a designated contract market, and . . . ensuring that the participants in [the] market were adhering to CFR rules as well as other rules.” (*Id.* at 438.) Ms. Christiansen would learn about possible violations in a number

***The provisions of this Rule apply to all market states, including the pre-opening period, the closing period, and all trading sessions.

CME Rule 575; *see also* CME Rulebook, available at <http://www.cmegroup.com/rulebook/CME/I/5/5.pdf> (last visited July 12, 2016).

of ways. The CFE conducted its own surveillance in search of violations of specific rules. (*Id.* at 439.) In addition, the CFE had an agreement with the National Futures Association (“NFA”) under which the NFA conducted surveillance in the CFE’s markets. (*Id.*) The NFA is a registered futures association that is, in part, responsible for providing regulatory services—such as conducting surveillance, performing investigations, and filing reports—to designated contract markets, including the CFE. (*Id.* at 440.) Finally, the CFE often received complaints from market participants about other participants’ activities. (*Id.* at 439.)

Ms. Christiansen learned about the act of “spoofing” while working on regulatory planning and strategy for the CBOE. (*Id.* at 456–57.) In this role, she worked to understand spoofing to help the CBOE’s regulatory development team build spoofing surveillance. (*Id.* at 457.) In doing so, she understood spoofing as “putting orders on one side of the market to create the impression of interest at that price level, followed by a cancellation of those orders, and then trading on the opposite side on that price level that . . . where those orders that were cancelled previously rested.” (*Id.*) In addition, CFE Rule 620(c), established in 2012, explicitly prohibited spoofing. (*Id.* at 471–72.) Indeed, the language mirrored that found in CEA section 4c(a)(5)(C), providing, in relevant part:

No Trading Privilege Holder nor any of its Related Parties shall engage in any trading, practice or conduct on the exchange or subject to the Rules of the Exchange that:

- (c) Is, is of the character of, or is commonly known to the trade as “spoofing” (bidding or offering with the intent to cancel the bid or offer before execution).

CFE Rule 620(c).⁶

⁶ In light of recent amendments, what was CFE Rule 620(c) in 2013 is now CFE Rule 620(a)(iii). Interestingly, on July 30, 2015, the CFE added section 620(b), which provides:

In February 2013, Ms. Christiansen received a complaint from the chief compliance officer at a trading firm reporting trading behavior in the VIX market that resembled what she understood to be spoofing. (*Id.* at 459.) Specifically, the complaint identified “a pattern of several orders of various quantity [sic] coming into the market . . . that those orders were cancelled; and then within a very short period of time, the complainant’s orders that were still resting at that level would be traded against.” (*Id.* at 459–60.) Subsequently, Ms. Christiansen forwarded the complaint to the NFA and instructed them to conduct an investigation, as spoofing was under the CFE’s agreement with the NFA. (*Id.* at 461.) In the course of said investigation, the NFA identified Defendants as the participants engaging in this trading activity and discussed it with Defendants. (*Id.* at 468.) Indeed, as part of that discussion, the NFA showed Defendants examples of particular orders about which it had concerns. (*Id.* at 487.) Eventually, the NFA reported its findings and Defendants’ responses to Ms. Christiansen. (*Id.* at 466.) Ms.

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- (b) All Orders must be entered for the purpose of executing bona fide transactions. Additionally, all non-actionable messages must be entered in good faith for legitimate purposes.
- (i) No person shall enter or cause to be entered an Order or quote with the intent, at the time of entry, to cancel the Order or quote before execution or to modify the Order or quote to avoid execution;
 - (ii) No person shall enter or cause to be entered an actionable or non-actionable message or messages with intent to mislead other market participants;
 - (iii) No person shall enter or cause to be entered an actionable or non-actionable message or messages with intent to overload, delay, or disrupt the systems of the Exchange or other market participants; and
 - (iv) No person shall enter or cause to be entered an actionable or non-actionable message with intent to disrupt, or with reckless disregard for the adverse impact on, the orderly conduct of trading or the fair execution of transactions.

The provisions of this Rule apply to all market states, including the pre-opening period, the closing period, and all trading sessions.

CFE Rule 620(b); *see also* CBOE Futures Exchange, LLC Rule Certification Submission Number CFE-2015-020 (July 16, 2015), available at <https://cfe.cboe.com/publish/CFERulefilings/SR-CFE-2015-020.pdf> (last visited July 12, 2016).

Christiansen learned that the company responsible for the trading pattern identified in the complaint was 3Red and the individual trader was Igor Oystacher. (*Id.* at 462–63.) Further, the NFA informed Ms. Christiansen that the trading behavior “seem[ed] to be spoofing.” (*Id.* at 464.) The NFA reported that it observed “several orders of various quantities coming in within a relatively short period of time, those orders resting for a short period of time, a cancel of those orders, followed by an immediate larger order coming in and trading against all the other orders remaining at that price level.” (*Id.*) This trading conduct struck Ms. Christiansen as “unusual.” (*Id.* at 465.) Indeed, the “pattern as a whole” and the “number of times that it occurred in the marketplace” led her to believe that this activity was spoofing. (*Id.* at 465–66.) Defendants’ responses to the NFA did not convince Ms. Christiansen otherwise. Instead, she found they provided no explanation for what caused them to change their trading position so quickly and so often. (*Id.* at 468–69.)

Between February 19 and March 20, 2013, Ms. Christiansen received two more complaints from CFE market participants, Tibra Trading and Blue Fire Capital. (*Id.* at 469.) These complaints highlighted trading patterns in the VIX market that mirrored the conduct described in the first complaint. Specifically, “[t]hey indicated that they were observing several small orders coming in to the market, those orders then being cancelled almost simultaneously, and then very quickly having their orders at that same price level where those orders previously were being hit or taken by one large order.” (*Id.* at 470.) Again, Ms. Christiansen forwarded these complaints to the NFA and instructed them to initiate an investigation. (*Id.* at 470–71.)

Around March 21, 2013, Ms. Christiansen, along with other CFE enforcement staff and NFA representatives, discussed Defendants’ trading activity with Defendants’ clearing firm, Advantages Futures. (*Id.*) At this time, Ms. Christiansen informed Defendants’ clearing firm

about the complaints, the open investigation, and, importantly, Defendants' trading pattern at the heart of both. (*Id.* at 471–72.) She also reminded Defendants' clearing firm of its duty to supervise Defendants' activities appropriately under CFE rules. (*Id.* at 472.)

Further, Ms. Christiansen directly communicated with Defendants on multiple occasions. Ms. Christiansen first met with 3Red's now-former Chief Compliance Officer and another employee, Edwin Johnson and Jen Lee, respectively, on March 26, 2013, shortly after her March 21 meeting with Advantages Futures. (*Id.* at 474.) Defendants informed Ms. Christiansen that Advantages Futures removed their access to the CFE and requested the intervention of Ms. Christiansen's office. (*Id.* at 476.) Ms. Christiansen explained that Defendants would have to work directly with Advantages Futures. (*Id.*) Then, in or around October 2013, Ms. Christiansen met with Steve Strohmer and Greg O'Connor, 3Red's Chief Operating Officer and Chief Compliance Officer, respectively. (*Id.*) Defendants desired to introduce themselves in an effort to aid their application for trading privileges on the CFE. (*Id.*) Ms. Christiansen, however, informed Defendants that the CFE had put a hold on 3Red's application as a result of the open investigation. (*Id.* at 476–77.)

In November 2013, the NFA issued a final report to Ms. Christiansen and the CFE regarding its investigation into Defendants' trading practices. (*Id.* at 477–78.) Specifically, the NFA recommended that Ms. Christiansen and the CFE consider finding that Defendants violated, in part, Rule 620(c), prohibiting spoofing. (*Id.* at 478.) Around this time, Ms. Christiansen became aware that the CFTC also had opened an investigation into Defendants' trading activities. (*Id.*) Accordingly, she shared the NFA's investigation report and the CFE's own data with the CFTC. (*Id.*) Ultimately, the CFE closed its investigation into Defendants in an effort to

conserve resources, as the CFTC included the CFE's VIX market report in its investigation. (*Id.* at 479.)

4. Karsten Hiestermann

Karsten Hiestermann has a law degree and is the head of the Exchange Supervisory Authority for the Ministry of Economics of the State of Hesse, Germany and has fulfilled this role for the last twenty years. (*Id.* at 291–92.) Before working with the Exchange Supervisory Authority, Mr. Hiestermann worked for the Ministry of Economics as a legal expert on antitrust and commercial competition law. (*Id.* at 292.)

The Exchange Supervisory Authority is responsible for regulating the exchanges in Hesse, Germany, including futures exchanges. (*Id.*) Specifically, the Exchange Supervisory Authority regulates, in part, the Eurex Deutschland exchange (“Eurex”) where market participants trade futures contracts and options on bonds, stocks, and indices in markets such as the EURO STOXX market. (*Id.* at 292–93.) In the Eurex exchange, the Trading Surveillance Office conducts electronic surveillance over all trading and reports any suspected violations directly to both Eurex’s Board of Management and the Exchange Supervisory Authority. (*Id.* at 296–97.) If the Board of Management agrees with the Trading Surveillance Office’s violation report, it then transfers the report to Eurex’s Disciplinary Committee. (*Id.* at 297–98.) The Disciplinary Committee then opens a formal proceeding. (*Id.* at 298.) The Committee sends the investigation report to the market participant suspected of committing a trading violation, notifies it of the allegations, and asks the participant to respond. (*Id.*) Ultimately, the Disciplinary Committee makes a final determination as to whether the participant violated Eurex’s rules and regulations. (*Id.* at 299.) If so, the market participant has a right to appeal the Committee’s findings. (*Id.* at 299–300.) Indeed, the participant can appeal the Committee’s

decision to the Administrative Court, the Administrative Court's decision to the Hessischer Verwaltungsgerichtshof ("the Higher Administrative Court"), and, in limited circumstances, the Higher Administrative Court's decision to the Federal Administrative Court. (*Id.* at 300.)

While working for the Ministry of Economics, Mr. Hiestermann understood the term "spoofing," as used in the futures market, to be a trading strategy where

a trading member enters a quantity of orders on one side of the order book. And, then, after other participants react on these orders entered into the order book by entering orders themself[ves] on the same side of the order book, the trading member who first entered his order on one side of the order book deletes these orders and enters one order or more orders on the other side of the order book to match against the orders which he had attracted into the order book.

(*Id.* at 294–95.) Further, Mr. Hiestermann and the Supervisory Exchange authority were responsible for enforcing Article 17 of the Eurex exchange rules, or the "Market Integrity Rule."

(*Id.* at 296.) The Market Integrity Rule prohibits spoofing by forbidding traders from "sending misleading signals on the supply and demand of financial instruments to the market." (*Id.*)

On July 11, 2013, the Trading Surveillance Office produced an information report to Mr. Hiestermann at the Exchange Supervisory Authority and the Eurex Board of Management flagging Defendants' trading patterns in the Eurex exchange. (*Id.* at 301; R. 20-10, Certified Translation of Attachments Produced by Ministry of the State of Hessen, at 18.) Specifically, the Trading Surveillance Office conducted an order book analysis, flagged Defendants' trading, and concluded that Defendants were spoofing. (*Id.*) Furthermore, around the same time, Eurex market participants Blue Fire, Jump Trading, Teza Trading, and Citadel all filed complaints with the Board of Management describing trading activity in the Eurex order book that Mr. Hiestermann and the Supervisory Exchange Authority considered to be spoofing. (*Id.* at 302.) The market participants were not aware of the trader responsible for this activity given the market's anonymity. (*Id.*) Mr. Hiestermann, however, determined that Defendant Oystacher

was the trader at issue in light of the Trading Surveillance Office's report. (*Id.* at 301.) After analyzing the Trading Surveillance Office's report, the Board of Management concluded that Defendants' trading violated Article 17, the Market Integrity Rule, and referred the case to the Disciplinary Committee. (*Id.* at 303.)

On January 28, 2014, the Disciplinary Committee opened a formal proceeding. (*Id.*; R. 20-10 at 18.) The Committee notified Defendants of the allegations, sent Defendants the Trading Surveillance Office's report and the Board of Management's records, and requested a response. (*Id.* at 305.) On April 23, 2014, Defendants responded. (*Id.*; R. 20-10 at 3–14.) In relevant part, Defendants summarized their response as follows:

Neither the Trading Supervisory Board of Eurex Germany nor the management of Eurex Germany have explained in concrete terms nor proven that Mr. Igor Oystacher or 3Red violated section 17, para. 2 of the Stock Exchange Ordinance. It has neither been explained in concrete terms or proven that [Defendant] Oystacher—erroneously or with an intention to deceive—influenced supply, demand, or price of the products traded at Eurex-exchanges, nor that he brought about prices not in line with market conditions or an artificial price level. . . .

The trading activities by [Defendant] Oystacher were not misleading, because all orders entered by [Defendant] Oystacher, including cancellations, were economically reasonable and were—in every case—based on the economic interest of carrying out business. Contrary to the assumption of the Trading Supervisory Board of Eurex Germany and the management, [Defendant] Oystacher had a trading interest with regards to all orders he entered, especially regarding the large-volume orders mentioned by the Trading Supervisory Board of Eurex Germany in its release to the management. . . .

Even if someone were wrongly to insinuate an erroneous or intentionally deceptive influencing of supply, demand, or price of the products traded at Eurex exchanges, or willful causation of no-market driven prices or an artificial price level, [Defendant] Oystacher would not have acted intentionally or negligently, insofar as he entered all orders with the will to execute them and did not fail to exercise reasonable care as is customary in trading.

(R. 20-10 at 29.)

On June 24, 2014, after considering, in part, Defendants' response, the Disciplinary Committee issued a ruling. (Tr. at 307; R. 20-10 at 17–26.) Specifically, the Committee concluded that Defendant violated Article 17, the Market Integrity Rule, on five separate trading events from August 29, 2012, April 15, 2013, and May 13, 2013. (*Id.* at 307–08; R. 20-10 at 20.) The Committee held that

[i]n all cases, [Defendant Oystacher] entered orders which ran contrary to his trading interest. This is demonstrated by the execution of the large-volume orders on the opposite side of the entered orders. In this way, [Defendant] deceived investors about the true financial circumstances of the respective financial instruments. His order entries do not reflect the market-driven situation. . . .

[Defendant Oystacher] attempts to explain the deletion of the large-volume orders after execution of the relatively small-volume orders on the other side of the orderbook with his assertion that he constantly reacts to changing market conditions. . . . It is plausible that a mistake about market development can happen to anyone, even an experienced trader like [Defendant Oystacher]. It is not believable, however, that the frequent cancellations of the large-volume orders is based on the correspondingly frequent errors by [Defendant Oystacher] about future price developments. . . .

An important factor was the fact that [Defendant Oystacher], as demonstrated by his presentations to the sanction committee, has not suspended his wrongful behavior, but instead, up to the present, is continuing it, with harm to other market participants.

(R. 20-10 at 22–24.) Consequently, the Committee fined Defendants ninety-thousand Euros.

(Tr. at 310.) Defendants subsequently appealed the Committee's decision to the Administrative Court. (*Id.*) The Administrative Court, however, denied Defendants' appeal and affirmed the Disciplinary Court's ruling. (*Id.* at 334.) As such, Defendants sought leave to appeal the Administrative Court's decision to the High Administrative Court. (*Id.*) As of this ruling, the High Administrative Court has not ruled on Defendants' request. (*Id.*)

One month later, in July 2014, the Trading Surveillance Office issued another report flagging Defendants' trading from July 25 and July 30, 2014. (*Id.* at 310–11; R. 20-10 at 39.)

According to the report, Defendant Oystacher was still engaging in the same trading behavior the Disciplinary Committee found illegal in June 2014. Similar to the first investigation, the Trading Surveillance Office sent the information report to Mr. Hiestermann at the Exchange Supervisory Authority and the Board of Management. (*Id.* at 311.) The Board of Management again concluded that Defendants’ trading violated Article 17, the Market Integrity Rule, and referred the matter to the Disciplinary Committee. (*Id.*) On October 15, 2014, the Disciplinary Committee opened another formal proceeding. (*Id.* at 311–12; R. 20-10 at 40.) The Committee notified Defendants of this second report, forwarded the relevant documents, and requested a response. (*Id.* at 312.) On December 12, 2014, Defendants responded, arguing again, in part, that Defendant Oystacher “reacts continuously to changing market conditions.” (*Id.*; R. 20-10 at 28–36.) On December 15, 2014, after considering Defendants’ response, the Committee concluded that Defendants’ trading events on July 25 and July 30, 2014 violated Article 17. (*Id.* at 314; R. 20-10 at 38–48.) Similar to its June 2014 ruling, the Committee found that

[t]his allegation is justified not only because of the relationship between the large- and small-volume orders, as they were entered by [Defendant Oystacher], but also because of the relationship between the volumes of the entered orders by [Defendant Oystacher] in comparison to the total volume of orders entered by all other market participants. . . .

The frequent change [sic] from buyer to seller or vice versa are not, however, to be viewed as individualized trading decisions and do not explain the relationship between large- and small-volume orders. Instead, this is to be seen as a thought-out trading strategy.

(*Id.* at 315; R. 20-10 at 45.) As a result, the Committee fined Defendants two-hundred and fifty thousand Euros. (*Id.* at 317; R. 20-10 at 39.) Defendants also appealed this decision to the Administrative Court. (*Id.* at 333.) The Administrative Court, however, also denied this appeal and affirmed the Disciplinary Court’s ruling. (*Id.* at 334.) Similar to the first ruling, Defendants sought leave to appeal the Administrative Court’s decision to the High Administrative Court.

(*Id.*) As of this ruling, however, the High Administrative Court has not ruled on Defendants' request. (*Id.*)

Finally, on March 2, 2015, the Trading Surveillance Office issued another report to Mr. Hiestermann at the Exchange Supervisory Authority and the Board of Management alleging that Defendants' trading on January 28, 2015 violated Article 17, the Market Integrity Rule. (*Id.* at 318; R. 20-10 at 65.) The investigation then followed the same procedure detailed above. (*Id.* at 318–24.) On May 15, 2015, Defendants responded. (R. 20-10 at 50–61.) On May 20, 2015, the Disciplinary Committee issued a ruling relying, in part, on Defendants' response. (Tr. at 324; R. 20-10 at 63–74.) According to the Committee, five of Defendants' trading events on January 28, 2015 violated Article 17. (*Id.*; R. 20-10 at 66.) Notably, the Exchange Council supplemented Article 17 between the second and third Disciplinary Committee rulings. (*Id.* at 325–26.) Specifically, Article 17 now explicitly prohibits entering orders in the order book without the intention of trading on those orders. (*Id.*) The Committee ruled, in part, that Defendants

built up large-volume orders on one side of the orderbook in order to feign liquidity and interest, respectively, to other trading participants. This had the result that other trading participants entered orders on the same side of the order book with the same price limit. Subsequently, the initially entered orders were deleted by [Defendant Oystacher] and were entered on the other side of the orderbook with identical price limits, which were executed against the orders of the other trading [sic] participants. Typical of this procedure was the fast switching of sides in the orderbook by [Defendant Oystacher].

The order entries of [Defendant Oystacher] were predominantly based on no detectable trading interest.

This is borne out by the deletion of large-volume orders after partial execution, and by the percentage of large-volume orders of [Defendant Oystacher] at certain price levels in relation to the total volume, which is significantly high. . . .

The disproportionately large percentage of orders by [Defendant Oystacher] at specific price limits in relation to the total order volume substantiates the allegation of market manipulation through initiating a trading interest with the other trading [sic] participants. . . .

It was not possible for many trading participants . . . to enter orders themselves as a reaction to the orders of [Defendant Oystacher].

(*Id.* at 326–28; R. 20-10 at 66–70.) As a result, the Committee suspended Defendants from trading on the Eurex exchange for thirty days—the maximum amount of time the Disciplinary Committee can prohibit a market participant from trading. (*Id.* at 328–29.) Similar to the first two rulings, Defendants appealed the Committee’s third ruling against it. (*Id.* at 331.) The Administrative Court also denied this appeal, and Defendants have not yet received leave to appeal this decision to the High Administrative Court. (*Id.* at 335–36.)

In March 2014, during the course of these investigations, Mr. Hiestermann met directly with Mr. O’Connor and Mr. Strohmer of 3Red. (*Id.* at 330–31.) The 3Red employees requested the meeting to explain Defendants’ trading strategies after receiving the allegations and supporting documents from the exchange. (*Id.* at 331.) Mr. Hiestermann, however, found that they “did not explain why in specific cases, which were, for instance, subject to the [D]isciplinary [C]ommittee’s decisions, [Defendant] Oystacher specifically entered and deleted the orders and why specifically he jumped on the other side of the order book.” (*Id.*) Instead, the 3Red employees only provided “broad and unspecific” explanations. (*Id.*) As a result, Mr. Hiestermann agreed with the Disciplinary Committee’s rulings and concluded Defendants’ trading behavior constituted spoofing in violation of Article 17, the Market Integrity Rule. (*Id.*)

D. Defendants’ Previous Exchange Violations

Defendant Oystacher’s trading in the Crude Oil, Copper, Silver, Gold, S&P 500 E-Mini, ZN, CAX40, Brent Crude Futures, DAX, Euro Baden, Euro Bobl, and EURO STOXX markets has been subject to investigation for spoofing. (*Id.* at 670–71.) Indeed, Defendant Oystacher’s trading has triggered inquiries or investigations in every exchange on which he has traded,

including, in part, the NYMEX, COMEX, CME, ICE, and Eurex. (*Id.* at 670; CFTC Exh. 215.)

These investigations clearly and repeatedly informed Defendant Oystacher that his flipping patterns were problematic under applicable laws and regulations.

1. NYMEX and COMEX

On November 25, 2014, the NYMEX and COMEX Business Conduct Committees found that Defendants committed rule violations on various trading days between December 2010 and July 2011 and May and July 2011, respectively. (R. 20-8 at 6–7, 9–10.) The NYMEX and COMEX are commodity futures exchanges owned and operated by the CME. The CME interviewed Defendant Oystacher in the course of both the NYMEX and COMEX investigations. Specifically, on March 3, 2011, the CME interviewed Defendant Oystacher regarding the NYMEX investigation, informing him, in part, that “interesting for us initially is that we see a fairly quick flip-flop from the bid side to the sell side, but using the same tactic of an iceberg on one side and exposed lots for much greater size on the opposite side.” (Tr. at 676; CFTC Exh. 213.) In addition, on September 20, 2011, the CME interviewed Defendant Oystacher regarding the COMEX investigation, informing him that it seemed he was “using orders that were visible on one side of the market” to trade partially hidden orders, using icebergs, on the other side of the market. (*Id.* at 681–82; CFTC Exh. 214.) Indeed, the Exchange notified Defendant Oystacher that the high percentage of visible, or exposed, orders on one side of the market suggested that he did not intend to trade those orders. (*Id.* at 683–84.)

In November 2014, the NYMEX concluded that

(1) on several dates between December 2010 and July 2011, [Defendant] entered bids and offers in Crude Oil futures contracts in such a manner so as not to have the requisite intent to trade at the time of order entry. These bids and offers were subsequently cancelled by [Defendant]; and (2) in several instances during the time period in question [Defendant] placed 50-lot iceberg order [sic] showing 1-lot at or near the best bid/offer on one side of the market and subsequently placed

multiple 50-lot non-iceberg orders on the opposite side of the market, also at or near the best bid/offer. Once trading ceased on his iceberg order, the orders on the opposite side of the market were completely cancelled by [Defendant], in many cases less than a second after they were entered.

In determining that the non-iceberg orders were entered without the requisite intent to be traded, the Panel considered numerous factors, including the significant imbalance created by [Defendant Oystacher's] 50-lot non-iceberg orders, the percentage of large orders cancelled, and the exposure time of the cancelled orders.

The Panel concluded that by engaging in the foregoing conduct, [Defendant] violated NYMEX Rules 432.B.2 (to engage in conduct or proceedings inconsistent with just and equitable principles of trade) and 432.Q (to engage in an act which is detrimental to the interest or welfare of the Exchange or to engage in any conduct which tends to impair the dignity or good name of the Exchange).

(R. 20-8 at 9–10.) The COMEX made the same findings with regard to Defendant Oystacher's trading in Silver, Gold, and Copper futures markets. (*Id.* at 6–7.)

Ultimately, Defendant Oystacher testified that Defendants settled both the NYMEX case and the COMEX case, neither admitting nor denying the rule violations or related findings. (*Id.* at 9; Tr. at 685.) Pursuant to the settlement, the NYMEX fined Defendant Oystacher one hundred thousand dollars, suspended Defendant Oystacher's CME membership privileges for one month, and completely banned Defendant Oystacher from trading or accessing the CME for one month, dating from November 28 to December 28, 2014. (*Id.* at 10; Tr. at 686.) Likewise, the COMEX fined Defendant Oystacher fifty thousand dollars and initiated the same one month bans on his CME membership and trading privileges. (*Id.* at 7; Tr. at 685.)

2. CME

The CME also investigated Defendant Oystacher's trading activities on other occasions. (Tr. at 688–89.) Indeed, the CME interviewed Defendant Oystacher on more than one occasion from June or July 2013 to April 2014. (*Id.*; CFTC Exh. 216.) Specifically, the CME investigated Defendant Oystacher's trading days in August and September 2013 and expressed

interest in his flipping activity. (*Id.* at 690–91; CFTC Exh. 216.) Indeed, during the interview, the CME told Defendant Oystacher, “you’re a more active flipper than most people. . . . [Y]our flipping occurs quite a bit . . . I mean, in just the five-year, you had 273 of these market trading orders, and it was all one day, and, you know, I don’t think we’re seeing any market participant that reaches those kind of levels, so it seems to be a big part of your strategy.” (*Id.* at 694; CFTC Exh. 216.) The CME also asked Defendant Oystacher whether he was placing “orders . . . in the book to ideally flip the market to be placed in the book so that others will join so that [he] can flip the market and capture any additional volume[.]” (*Id.* at 703–04; CFTC Exh. 216.) Additionally, one of Defendant Oystacher’s attorneys met with the head of CME’s global enforcement counsel in July or August 2014. (*Id.* at 704.) Defendant Oystacher became aware that the attorneys discussed the guidance concerning flipping in the CME group draft rule that, eventually, became Rule 575. (*Id.*) Defendant Oystacher also learned that Rule 575 went into effect on September 15, 2014. (*Id.* at 706.)

On September 15 and 17, 2015, the CME interviewed Defendant Oystacher again and informed him that it had received market participant complaints about his trading activity. (*Id.* at 706–07.) Specifically, the CME informed Defendant Oystacher that its investigation was focused on his flipping activity. (*Id.* at 707.) Later, in February 2016, the CME notified Defendant Oystacher that it had received a complaint about his flipping activity in the ZN market. (*Id.* at 710.) The CME informed Defendant Oystacher that it was considering a summary action to temporarily revoke his trading privileges immediately on or before February 16, 2016. (*Id.* at 714.) In this meeting, the CME described some of the market participant complaints to Defendant Oystacher. Subsequently, Defendant Oystacher, his lawyer, and his

compliance officer responded to some of the CME's concerns by discussing several of the identified problematic trades. (*Id.* at 717–19.)

3. ICE

By June 27, 2012, Defendant Oystacher learned that the Intercontinental Exchange, Inc. (“ICE”) Europe was investigating his trading activity in the Brent Crude Futures contract market. (*Id.* at 719–20.) On June 25, 2012 and February 27, 2013, the ICE Europe sent Defendant Oystacher's clearing firm letters describing its concerns. (*Id.* at 720.) Defendant Oystacher was aware of these letters. (*Id.* at 723.) Specifically, the ICE Europe informed Defendant Oystacher's clearing firm that it was going to investigate circumstances concerning multiple occasions where he placed large orders into the market, giving the impression of market depth, and cancelled them immediately before placing orders at the same level in the opposite direction. (*Id.* at 721.) The ICE Europe also concluded, after its own preliminary investigation, that Defendant Oystacher's trading presented a prima facie case of “disorderly” trading patterns. (*Id.* at 723.) In light of the investigation, Defendant Oystacher stopped trading on the ICE Europe Brent contract as of November 16, 2012. (*Id.* at 721.) In February 2013, Defendant Oystacher's chief compliance officer met with the ICE Europe, and Defendant Oystacher learned of ICE Europe's conclusions. (*Id.* at 723.)

On March 26, 2013, Defendant Oystacher also participated in a telephone interview with the ICE US that had opened an investigation into his trading activities. (*Id.* at 741.) On June 5, 2015, the ICE US Business Conduct Committee also found that Defendants had committed rule violations on a number of trading days between September and December 2012. (R. 20-8 at 8.) Specifically, the ICE US found that Defendants violated

Exchange Rule 4.04 by engaging in conduct detrimental to the best interests of the Exchange in the Russell 2000 Mini Futures (“TF”) contract between September

2012 and December 2012 by engaging in a pattern of trading activity where he would enter buy or sell orders on one side of the market at different price levels and subsequently cancel such orders in close time proximity to trades the [Defendant] executed on the opposite of the market.

(*Id.*) In June 2015, Defendants settled the case with the ICE US. (*Id.*; Tr. at 743–44; Def. Exh. D243.) As such, the ICE fined Defendants one hundred twenty five thousand dollars and issued Defendants a cease and desist order. (*Id.*)

4. EUREX

As described in more detail above, the Eurex also found that Defendants had committed rule violations in a number of its markets in three separate rulings. These violations were premised on the same general pattern of flipping activity in Defendant Oystacher's trades on which the other exchange violations were based. First, in June 2014, the exchange's Disciplinary Committee found that Defendants' trading in August 2012, April 2013, and May 2013 across the DAX, Euro-Bund, Euro-Bobl, and EURO STOXX 50 markets violated Article 17 of the Eurex exchange rules and regulations, or the Market Integrity Rule. According to Mr. Hiestermann of the Exchange Supervisory Authority in Hesse, Germany, Eurex found that Defendants were spoofing their markets. As a result, Eurex fined Defendants ninety thousand Euros. Second, in December 2014, the Disciplinary Committee found that Defendants were committing the same rule violations in the DAX and EURO STOXX futures markets in July 2014, one month after Eurex's first ruling. Accordingly, Eurex fined Defendants two hundred and fifty thousand Euros. Finally, in May 2015, the Disciplinary Committee found that Defendants were again committing the precise rule violations in the Euro-Bobl futures markets in January 2015, one month after Eurex's second ruling. As such, Eurex completely banned Defendants from the exchange for thirty days—the maximum suspension Eurex can impose. Defendants appealed all three of these rulings to the Administrative Court, and the

Administrative Court denied Defendants’ appeal and affirmed all three of the rulings.

Defendants are currently awaiting leave from the High Administrative Court to appeal the Administrative Court’s decisions.

E. Expert Witnesses

1. CFTC Expert Professor Hendrik Bessembinder

Professor Bessembinder is a Professor of Finance at Arizona State University with a Bachelor’s degree in Business from Utah State University, an M.B.A. from Washington State University, and a Ph. D. with a major in Finance and a minor in Business Economics and Research Methods from the University of Washington. (Tr. at 1456.) He also has served as a Professor of Finance at the University of Utah, Emory University, and the University of Rochester. (*Id.*) Professor Bessembinder has taught a variety of classes including, in part, Introductory MBA Corporate Finance, International Finance, Futures and Options, and Ph. D.-level courses in financial markets. (*Id.* at 1456–57.) Apart from teaching, Professor Bessembinder is currently the managing editor of the *Journal of Financial and Qualitative Analysis* and the associate editor of both *General Financial Economics* and the *Journal of Financial Markets*. (*Id.* at 1457.) Throughout the course of his research, Professor Bessembinder has published over thirty “theory” and “empirical” academic papers on commodity markets and market microstructure over the last twenty years. (*Id.* at 1457–59.) Indeed, Professor Bessembinder specializes in “market microstructure”—“the study of trading, in particular, trading in financial and commodity markets, everything from order submission strategies, market rules, [and] market liquidity[.]” (*Id.* at 1457.) In addition, Professor Bessembinder has served as an expert in cases involving market manipulation “several times” and, specifically, cases regarding the economic practice of spoofing, “[t]wice.” (*Id.* at 1461–62.)

Professor Bessembinder had an “economist’s understanding” of the term spoofing “as opposed to a legal scholar’s interpretation.” (*Id.* at 1460.) He defined spoofing as follows:

So I understand spoofing to be a strategy. I do think the sports analogy is a useful one. Essentially, it’s fake left, go right. You fake left to try to get a reaction from your opponent so that you can take advantage of that reaction. So that’s the sports analogy.

More specifically, spoofing strategies in the financial markets, as I understand them, involve the submission of orders on one side of the market without intent to execute those orders.

The intent, instead, is to elicit a reaction from other market participants. In particular, if other market participants believe as a basis—as a consequence of the spoof orders, the fake orders, if they believe that that’s an indication of change in supply and demand conditions or if they believe that’s indicative of a likely future price change, they can respond by—potentially respond by adding more orders on the side of your—of your spoof orders or not withdrawing orders that they might have otherwise withdrawn.

So the entry of the spoof orders is the fake. The desired reaction is the entry of additional orders on the same side as your spoof orders.

Why do you do all this? Because you actually wanted to trade in the opposite direction of your spoof orders. If . . . other people do react in this manner, you can benefit from their reactions by getting some combination of better prices for the orders that you actually wanted to trade or higher fill rate on the orders you wanted to trade.

(*Id.* at 1460–61.)

a. Professor Bessembinder’s Methodology

The Court has carefully reviewed and considered Professor Bessembinder’s hearing testimony and expert reports. Professor Bessembinder’s opinions at the hearing were well supported and based on sound factual underpinnings and analysis.

In 2014, the CFTC hired Professor Bessembinder to “analyze market data and conduct statistical tests that had potential to shed light on the question of whether spoofing activity had occurred or not.” (*Id.* at 1464–65.) Professor Bessembinder analyzed two types of data: market

data, or limit order book data, and order data. Market data is “a continuous record of the best bid price, best offer price in the market, as well as the number of orders residing and the number of contracts on those orders residing at the bid price and the offer price and, in addition, the same information for up to ten additional price levels beyond the bid and the ask.” (*Id.*) The market data is “what active market participants would have observed on those dates.” (*Id.* at 1467.) Order data, however, is a “non-public data set . . . [that includes] a record of every order submission, every cancellation, and every trade, along with descriptive information like the size of the order, whether it was an iceberg order, and an indicator, the Tag50 indicator . . . that indicates who was the trader [sic] that was submitting this order or on this trade.” (*Id.*)

Ultimately, Professor Bessembinder analyzed thousands of trades and over one hundred gigabytes of market data from both Defendants and other market participants across the Crude Oil market, the Natural Gas market, the Copper market, the VIX market, and the ES market during “sixty trading dates ranging from December 2011 to May 2015.” (*Id.* at 1467–68; R. 20-4, CFTC Exh. 94, at 5.) He later reviewed data from the ZN market from two trading days in February 2016. (*Id.*; R. 134, CFTC Exh. 95.) These sixty-two dates and six markets were based on “complaints from market participants . . . [and] on Ms. McCormack’s⁷ investigative work.” (*Id.* at 1466.) Specifically, Professor Bessembinder reviewed 85,110 of Defendant Oystacher’s orders and more than 151 million market data records. (*Id.* at 1477–78; CFTC Exh. 234.) For some of his analysis, Professor Bessembinder relied on all of this aggregate market data. For other parts of his analysis, however, Professor Bessembinder and the CFTC identified and used a number of particular parameters to limit the overall data to a particular subset of flips.

⁷ As explained earlier, Ms. McCormick is a Senior Futures Trading Investigator with the CFTC.

Professor Bessembinder first filtered the universe of data using a “flipping pattern” he identified in Defendant Oystacher’s trade data. As defined by Professor Bessembinder, “a flip is a case where a given trader cancels an order, one or more orders, and essentially simultaneously enters orders in the opposite direction at the same price or better.” (*Id.* at 1480.) Indeed, Professor Bessembinder’s “interest was in these essentially simultaneous events.” (*Id.*) Specifically, “[a] flip refers to [the] cancellation of an order followed by an opposite side order entry within 0.005 seconds and at the same or better price.” (CFTC Exh. 235.) Regarding the speed of these flips, Professor Bessembinder further explained,

[t]he cancellation and the entry of the opposite-direction order, they often had exactly the same time stamp, but they didn’t always have exactly the same time stamp. The very large majority of the cases, the orders on the two sides had the same or . . . one millisecond difference in their time stamps. But not wanting to miss any, I added what I think was a generous margin for computer latencies that are generating . . . this mismatch in timing and considered opposite-side orders out to five milliseconds after the cancel. . . . There was [sic] very few with more than one millisecond difference.

(Tr. at 1480–81.) Throughout his analysis, Professor Bessembinder referred to orders that were cancelled in a flip as “cancel-side orders” and orders that were entered in the opposite direction after the cancellation as “trade-side orders.” (*Id.* at 1481–82.) As described in more detail below, Professor Bessembinder concluded that “flipping, as measured by the percentage of [trader] accounts that flip, is rare. The very large majority in most of these markets right in the vicinity of 99 percent of the accounts never engage in even a single flip.” (*Id.* at 1490.) In stark contrast, Defendant Oystacher ultimately had 28,642 cancel-side orders that fit the “flipping pattern” definition. (*Id.* at 1560; CFTC Exh. 234.)

Professor Bessembinder then filtered those “flip” orders using what he referred to as “narrowing criteria.” (*Id.* at 1556.) Specifically, the four narrowing criteria included orders:

1. placed and canceled in less than a second,

2. that at least doubled the quantity of contracts that was already in the limit order book at the relevant prices,
3. that were placed at an existing price—i.e., did not establish a new best bid or offer, and
4. that were fully visible to the market—i.e., not iceberg orders.

(*Id.* at 1556–60; CFTC Exh. 235.) Professor Bessembinder explained that these criteria aimed to filter Defendant Oystacher’s orders down to discover whether any of his trades demonstrated a systematic creation of order imbalance, supporting the spoofing hypothesis. (*Id.*) He concluded that a number of Defendant Oystacher’s orders did.

Nearly 5,300 of Defendant Oystacher’s cancel-side orders demonstrated all four “narrowing criteria.” (*Id.* at 1559–60; CFTC Exh. 234.) The first criterion, as described in more detail below, focused on Defendant Oystacher’s behavior in the second prior to the flip. Professor Bessembinder found that “[t]he large quantities entered in that last second on the cancel side [and] the diminished use of icebergs[,] or the display of more when the iceberg option was used[,] . . . supported the hypothesis that [Defendant] Oystacher was engaged in spoofing.” (*Id.* at 1557–58.) The second, “doubling,” criterion focused on Defendant Oystacher’s order quantities and was meant to filter out “cases where only an imbalance of one or two or three contracts was created,” focusing instead “on cases where there was a substantive imbalance created.” (*Id.* at 1558.) The third criterion focused on Defendant Oystacher’s alleged spoof orders’ price aggressiveness, described in more detail below, to determine whether he was “more inclined to place orders behind existing orders, where they would have a lower probability of execution.” (*Id.* at 1558–59.) Finally, the fourth criterion excluded iceberg orders, detailed further below, making the orders fully visible to other market participants. (*Id.* at 1559.) In total, the narrowed set of data includes 5,296 cancel-side orders, excluding icebergs, and 1,595

trade-side orders. This narrowed data set constitutes Defendant Oystacher's trades charged in the Complaint as set forth above.

b. Defendant Oystacher's Trading Pattern

Reviewing these orders in the aggregate, Professor Bessembinder identified a "pattern" in Defendant Oystacher's trading behavior that he opined supported a "spoofing hypothesis." (Tr. at 1512.) Professor Bessembinder admitted that "there is no established template for testing for spoofing." (*Id.* at 1510–11.) Instead, he reviewed Defendant Oystacher's and other market participants' trades to assess whether they supported the conclusion that Defendant Oystacher "was spoofing" or the conclusion that he "intended to execute but change[d] his mind[.]" (*Id.* at 1512.) In other words,

[t]he second of those, that [Defendant Oystacher] just changes his mind, that would be based on something happened [sic] to cause him to change his mind, something unexpected. If these many, many flips that we see occurred because repeatedly something happened that surprised [Defendant] Oystacher, something he wasn't anticipating but he saw, something new or had some other change of heart that couldn't have been predicted, if it was all just surprises that caused change of mind, there really shouldn't be any pattern in his order entry behavior prior to these unpredictable changes of mind.

On the other hand, the spoofing hypothesis—which, again, to go to the simple sports analogy is fake left, go right—the spoofing hypothesis says there should be a pattern ahead of the flips. In particular, there should be a pattern by which we see the fake left. What is the fake left? Fake left is creation [sic] of order imbalances prior to the change of mind.

(*Id.* at 1512–13.) Ultimately, Professor Bessembinder presented five statistically significant findings that he concluded illustrate a pattern in Defendant Oystacher's trading behavior that is highly consistent with the spoofing hypothesis. These findings are persuasive. Professor Bessembinder did not, however, make a "legal conclusion." (*Id.* at 1648.) Instead, Professor Bessembinder concluded that the data "was highly consistent with the spoofing hypothesis." (*Id.*) As explained in further detail below, Professor Bessembinder found that

1. Defendant Oystacher's scale of flipping activity was far out of proportion to his size in the market.
2. Defendant Oystacher relied on trade-side flip orders for trade executions to an extent that was entirely unique across thousands of market participants.
3. Defendant Oystacher systematically created large order imbalances in favor of the cancel side of the visible limit order book just before he flipped.
4. Defendant Oystacher's cancel-side orders were anomalous as benchmarked against his own non-flip orders or his trade-side orders.
5. The general pattern of Defendant Oystacher's order entry and cancellation around flips has been largely unchanged in six markets and over more than four calendar years.

(*Id.* at 1610–1615; CFTC Exh. 237.)

Specifically, Professor Bessembinder examined, in part, four categories of behavior and associated effects that he concluded, when considered in the aggregate, comprise a trading pattern that supports the “spoofing hypothesis:” order quantities, iceberg orders, price aggressiveness and order execution, and cancellation speed. The Court details each category in turn below. Importantly, all of these categories, according to Professor Bessembinder, help illustrate the “key issue”—Defendant Oystacher's systematic creation of order imbalance prior to a flip event, supporting the spoofing hypothesis. (*Id.* at 1529.)

i. Order Quantities

“[Q]uantities matter in these markets” because of the resulting order book imbalances. (*Id.* at 1493.) “An imbalanced book basically means you have more ability to trade immediately on one side of the market than the other, should you wish to. And imbalance in the book is potentially informative of conditions in the underlying supply and demand.” (*Id.* at 1473.) Put differently,

[t]he relevance of a spoofing strategy is that the entry of the spoof orders on one side of the market creates what can be and I think has been termed an imbalance,

an imbalance in the limit order book. It's plausible, even likely, that people observing the book will . . . interpret an imbalance in the book as a change in supply and demand conditions in the markets, so any imbalance on the buy side is quite plausibly interpreted as increasing demand and vice versa.

(*Id.* at 1464.) As such, Defendant Oystacher's order quantities compared to other market participants are relevant, as "[a]n imbalance of one contract in the book, who knows if anybody would even notice it[.] . . . A large imbalance is more noticeable than a small imbalance, other things equal." (*Id.* at 1493.)

Defendant Oystacher's particular quantities of cancel and trade-side order entries illustrate a number of uniform characteristics across five markets. Specifically, Defendant Oystacher 1) entered more cancel-side orders than all other flipping market participants combined, 2) cancelled a larger share of his total entered orders than all other market participants combined, 3) accelerated his cancel-side order entries the closer he got to his flip event, 4) created a cancel-side order book imbalance both in the overall market and within his own trading, and 5) entered more trade-side orders compared to non-flip orders. Importantly, where applicable, the probability values ("p-values") demonstrate that each of the relative differences described below were statistically significant, suggesting that they did not consistently occur by chance. (R. 20-4, CFTC Exh. 94.)

A. Quantity of Cancellations

Defendant Oystacher often cancelled the largest number of contracts among all market participants engaged in flip orders. Defendant Oystacher cancelled a total of 1,671,304 ES contracts during December 2013 and January 2014, for example, while the second largest cancelling participant cancelled 75,327. (*Id.* at 17.) The same significant difference holds true across five other markets: Defendant Oystacher cancelled 519,573 VIX contracts compared to the second largest 15,309; 300,299 ES contracts in April and May 2015, compared to the second

largest 39,079; 83,451 Copper contracts compared to the second largest, 3,325; 77,931 Natural Gas contracts compared to the second largest 9,054; and 40,403 Crude Oil contracts compared to the second largest 2,556. (*Id.* at 15.)

Moreover, Defendant Oystacher cancelled more than all of the other trading accounts combined. (*Id.*) In the ES market during December 2013 and January 2014, for example, Defendant Oystacher's 1,671,304 contract cancellations were larger than the rest of the market participants' 387,034 total. (*Id.* at 16.) Again, this holds true across five markets: Defendant Oystacher's 519,573 cancelled VIX contracts were more than that market's 34,790 total; his 300,299 cancelled ES contracts in April and May 2015 were more than that market's 160,785 total; his 83,451 cancelled Copper contracts were more than that market's 3,854 total; his 77,931 cancelled Natural Gas contracts were more than that market's 14,919 total; and his 40,403 cancelled Crude Oil contracts were more than that market's 7,388 total. (*Id.* at 15–16.)

B. Percentage of Total Orders Cancelled

Professor Bessembinder also credibly demonstrated that Defendant Oystacher cancelled larger portions of his total entered orders upon flipping as compared to all other participants in each relevant market. In other words, Defendant Oystacher's cancellations at the flip were larger than other participants' in both absolute size and relative share of total entered orders. Defendant Oystacher cancelled 36.9 percent of his Natural Gas contracts, for example, while all other participants combined cancelled only 0.3 percent. (R. 134, CFTC Exh. 95, at 12.) He cancelled 35.2, 33.4, and 25.7 percent of his VIX, Crude Oil, and Copper contracts, respectively, while the rest of participants in those markets cancelled 0.1 percent in all three. (*Id.*) Finally, during December 2013 and January 2014, Defendant Oystacher cancelled 29.5 percent of his ES contracts, and all other market participants cancelled only 0.6 percent. (*Id.*)

C. Acceleration of Cancel-Side Orders in Seconds Approaching Flip Event

Defendant Oystacher also ordered a higher number of cancel-side contracts one second before the impending flip event as compared to earlier seconds. Put differently, Defendant Oystacher accelerated his cancel-side contract entry rate as he got closer to the flip event. (Tr. at 1519, “[T]he term I’ve been using, acceleration, refers to the fact that . . . the size of the contribution to the imbalance is becoming larger as we get close to the flip and, in particular, in the last second.”) Five seconds before Defendant Oystacher’s flip event in the Crude Oil market, for example, he was ordering 17.42 cancel-side contracts per second. (R. 20-4, CFTC Exh. 94, at 81.) At two seconds before canceling, Defendant Oystacher was ordering 21.77 cancel-side contracts per second. (*Id.*) At one second, however, he was ordering 73.75 cancel-side contracts per second. (*Id.*) This trend holds true across four other markets at issue. Indeed, Defendant Oystacher’s cancel-side contract order rate per second accelerates from 14.95 contracts per second at five seconds out from the flip event to 56.49 contracts per second at one second out in the Natural Gas market; from 17.04 to 57.35 contracts per second in the Copper market; from 25.78 to 68.81 contracts per second in the VIX market; and from 73.80 to 276.56 contracts per second in the ES market during June 2013. (*Id.* at 81–83.) Ultimately, Professor Bessembinder concluded that “there was systematically creation [sic] of order imbalances in favor of the side of the upcoming cancel. And that creation was more dramatic as we got closer to the flip.” (Tr. at 1517.) Moreover, he explained that

I wouldn’t . . . really expect to see that in any market there was systematic creation of order imbalances ahead of the flip if the flips were in response to unpredictable surprises in the market or some change of mind that couldn’t have been predicted. So, under the change-of-mind reasoning, I wouldn’t expect to see this pattern in any market, much less in all five markets.

On the other hand, under the spoofing hypothesis, . . . we should see evidence of the fake, the creation of the order imbalances. We should expect to see it in any time period where spoofing was engaged in systematically.

(*Id.* at 1526–27.)

D. Cancel-Side Imbalance

1. Market Imbalance: Defendant Oystacher’s Cancel-Side Order Magnitude Relative to Market’s Resting Orders at Time of Entry

Additionally, the narrowed data illustrates that Defendant Oystacher’s cancel-side order entries were much larger in magnitude than the market’s total number of orders already resting in the limit order book at the event price or better at the time he entered them. Specifically, in the Crude Oil market, Defendant Oystacher placed 9.91 times as many cancel-side order entries as cancel-side orders already resting in the book at that particular event price or better when he placed the orders. (R. 20-4, CFTC Exh. 94, at 31.) This pattern existed in other markets as well. Indeed, Defendant Oystacher placed 17.10 times as many cancel-side orders in the Natural Gas market, 18.77 times as many in the Copper market, 16.96 times as many in the VIX market, and 9.96 times as many in the ES market during June 2013. (*Id.*) This large increase, relative to the pre-existing orders, Professor Bessembinder concluded, created a market imbalance in the various markets’ displayed limit order book. “[T]he fact that there was multiple orders entered within each of the events . . . raises at least the possibility that other market participants would believe that cancel-side orders are coming from more than one market participant. If it had all been entered in one order, it would have been clear it was from just one market participant.” (Tr. at 1564.) Ultimately, Professor Bessembinder concluded that “these were very large multiples. In each of the markets and time periods, these were large multiples. . . . [O]n average across flip events in every contract market, his order entry was large compared to what was already on the

books. It was just too large to not notice for someone paying attention to the market.” (*Id.* at 1570.)

2. Defendant Imbalance: Unexecuted Cancel-Side Orders Relative to Total Unexecuted Orders Before Flip Event

Defendant Oystacher’s cancel-side orders also represented an imbalance within his own order book. (*Id.* at 1578; CFTC Exh. 183.) Specifically, Professor Bessembinder “measured the quantity of contracts outstanding on the buy side and the quantity of contracts outstanding on the sell side. Then, based on the measure of contracts outstanding on each side, [he] created a measure of how balanced or imbalanced his book was at that point in time. So, . . . [he] took the difference—the imbalance, if you will—. . . between quantity on the buy side and quantity on the sell side, and expressed that as a percentage of the total quantity on the two sides.” (*Id.* at 1578–79.) At one millisecond before the flip event, Defendant Oystacher’s unexecuted cancel-side orders nearly always represented a majority of his total unexecuted orders in both the narrowed and full data sets. (*Id.* at 1580–81.) In the narrowed set’s Natural Gas market, for example, Defendant Oystacher’s unexecuted cancel-side orders represented 90.32 percent of his total unexecuted market at one millisecond before his flip event. (R. 20-4, CFTC Exh. 94, at 32.) The same imbalance in his book occurred in at least four other markets, where Defendant Oystacher’s unexecuted cancel-side orders represented 88.12 percent of his total unexecuted VIX orders, 82.69 percent of his total unexecuted ES orders in June 2013, 76.62 percent of his total unexecuted Copper orders, and 75.50 percent of his total unexecuted Crude Oil orders. (*Id.*) Ultimately, Professor Bessembinder convincingly concluded,

[t]he main point to be noted here is that the cancellations did not come at times when [Defendant] Oystacher’s personal book was balanced, but rather it came at times—systematically came at times when his personal book was highly

imbalanced to the cancel side. He personally had far more orders on the cancel side than he did on the opposite side at the time of the flip.

It's really just another way of showing that his order entry has contributed to an imbalance in the book. . . . And it just verifies that, as of the time of the flip, he has contributed to an imbalance in favor of the cancel side.

And his personal imbalance is substantial. These are high percentages. In some of the markets, he is close to being a hundred percent of his orders on the cancel side.

(Tr. at 1579–80.)

E. Non-Flip Versus Trade-Side Order Quantities

Finally, Defendant Oystacher's trading patterns significantly differed between his non-flip and flip transactions. Specifically, Defendant Oystacher entered more trade-side orders after flip events than during non-flip transactions. During December 2013 and January 2014, for example, Defendant Oystacher only entered an average of 251.62 orders in non-flip transactions in the ES market. (R. 20-4, CFTC Exh. 94, at 38.) After flip events, however, Defendant Oystacher entered an average of 934.66 trade-side orders in the full data set and 774.48 trade-side orders across the narrowed data set. (*Id.*) Further, Defendant Oystacher's average non-flip order entries for the VIX, Crude Oil, Natural Gas, and Copper markets were only 110.39, 21.49, 15.22, and 12.04, respectively. (*Id.*) His average trade-side order entries following flip events in these markets were higher: 416.17 and 404.19 average VIX entries across the full and narrowed data set, respectively; 48.76 and 49.93 average Crude Oil entries; 35.08 and 32.96 average Natural Gas entries; and 28.27 and 30.34 average Copper entries. (*Id.*)

ii. "Iceberg" Orders

Defendant Oystacher's particular use of iceberg orders also followed a trading pattern consistent with the spoofing hypothesis. (Tr. at 1528.) Traders have the option to enter orders as iceberg orders in all futures markets except the VIX market. (*Id.*) An iceberg order, "also

known as a hidden quantity order, is an order type offered by certain designated contract markets on electronic trading platforms whose order quantities (i.e., number of contracts) are only partially visible in the Order Book to other market participants.” (R. 1 at 8; Tr. at 1528–29.) Iceberg orders, similar to order quantities, can contribute to the “key issue” of the “systematic creation of order imbalance prior to flips.” (Tr. at 1529.) Indeed,

going back to the sports analogy, if your opponent doesn’t see your fake, it’s not going to work. People don’t react to what they don’t detect. If the order imbalance is big, but the iceberg function is used to hide most of the size, it’s unlikely you’re going to get a reaction. People don’t react to what they can’t see.

On the other hand, if you elect to not use the iceberg function, then it ensures that the order size is fully displayed. So, a diminishing rate of iceberg usage implies that—well, when the iceberg option is not used, we know that the order was fully displayed to the market. If the iceberg option is used, only a portion of the order is displayed to the market.

(*Id.* at 1529–30.)

Specifically, Professor Bessembinder demonstrated that Defendant Oystacher consistently altered his iceberg order usage depending on a number of factors: 1) whether he was approaching a flip event, 2) whether he was entering cancel-side or trade-side orders, and 3) whether he was engaging in non-flip or flip transactions.

A. Cancel-Side “Iceberg” Order Reduction in Seconds Approaching Flip Event

Not only did Defendant Oystacher consistently accelerate his cancel-side trade order rate as he approached impending flip events, but he decreased his iceberg order usage. In other words, Defendant Oystacher made a lower percentage of his cancel-side orders icebergs in the final seconds leading up to the flip event. The data “showed much more order entry in that last second. . . . [I]n addition, virtually all of that was fully displayed to the market in the last second. So, the icebergs are disappearing on the cancel side in the last second.” (*Id.* at 1530.) In the

Copper market, for example, 28.88 percent of Defendant Oystacher's cancel-side orders were icebergs at five seconds before the flip event. (R. 20-4, CFTC Exh. 94, at 82.) At two seconds before the flip event, his iceberg use dropped to 14.04 percent. Finally, at one second before the flip event, only 3.46 percent of Defendant Oystacher's cancel-side orders were icebergs. This iceberg reduction trend existed in each market that allowed iceberg orders. Indeed, Defendant Oystacher's iceberg usage dropped from 56 percent at five seconds before the flip event to 2.39 percent at one second out in the Crude Oil market; from 27.58 percent to 1.44 percent in the Natural Gas market; and from 22.92 percent to 0.12 percent in the ES market during June 2013. (*Id.* at 81–83.) The VIX market did not allow iceberg orders during the relevant time periods. Professor Bessembinder cautioned that “he never said . . . and the [CFTC] never said that there's anything improper in the use of icebergs per se.” (Tr. at 1532.) Instead, “[t]he anomalous thing is . . . the low rate of iceberg usage on the cancel side, in particular on the cancel side in the last second, that's anomalous as compared to [Defendant] Oystacher's own behavior at other times.” (*Id.*)

Professor Bessembinder conducted the same analysis on Defendant Oystacher's ZN market data from February 2016. (*Id.* at 1542; R. 134, CFTC Exh. 95.) Generally, “the evidence shows that for this market and time period, as well, [Defendant] Oystacher was, indeed, systematically creating order imbalances in the seconds prior to the flip. . . . On average, he's entering more orders on the same side as the upcoming cancel as compared to the other side. As a matter of fact, in the last two seconds, he's not entering anything at all on the other side. All of the entries come in on the cancel side.” (*Id.* at 1543.) The ZN market data, however, differed from the other markets. “[I]n contrast to the other markets, the last second is not so uniquely different from immediately preceding seconds.” (*Id.*) Specifically, in the last second before the

flip event, there was no longer an average acceleration of orders quantities or reduction in iceberg usage. (*Id.*) In fact, Defendant Oystacher’s entries almost disappeared. (*Id.*)

Professor Bessembinder opined that “whatever strategy [Defendant] Oystacher [was] using, he . . . slowed it down.” (*Id.* at 1544.) “In short,” he explained, “[Defendant] Oystacher’s overall pattern of behavior around flips has remained consistent even in February 2016, but his strategy unfolds less quickly and involves less extreme size.” (R. 134, CFTC Exh. 95, at 32.) As such, Professor Bessembinder “zoom[ed] out” his analysis and “look[ed] at a longer interval out to 30 seconds” and, “instead of looking at individual seconds, . . . put it into five-second buckets.” (Tr. at 1544, 1546–47; CFTC Exhs. 167, 175–77.) Additionally, the 2016 data allowed Professor Bessembinder to examine each iceberg order’s “displayed size,” whereas the 2013 data did not. (*Id.* at 1538, 1547.) In other words, the data revealed the number of exposed and hidden contracts—the percentage of the order displayed and concealed—beyond simply identifying whether an order was an iceberg or not.

This new analysis demonstrated that Defendant Oystacher’s ZN market “overall pattern [was] very similar to what it was earlier, but it [was] not implemented in exactly the same way[.]” (*Id.* at 1545.) Specifically,

when you step back to 30 seconds and when you look at the number of exposed contracts . . . there is both creation of imbalances and acceleration. . . . More exposed contracts are being entered on the side of the upcoming cancel as compared to the other side. So, imbalance is being created within each bucket. And, once again, we can observe—once we step back to a wider view, we can observe—acceleration in that the number of exposed contracts is, on average, increasing as we get closer to the flip.

(*Id.* at 1548–49.) Further, although Defendant Oystacher was using more icebergs during this time period, he was “also exposing a larger proportion of his order. So he [was] using the option to hide some of it but exposing a larger proportion. . . . So we see asymmetry across sides of the

market with a higher percentage being exposed on the cancel side.” (*Id.* at 1549–50.) Notably, “a spoofing trader might elect to use the iceberg option on some spoof orders, either as part of a randomization strategy or because the displayed portion of the order is large enough to convey the desired impression to other market participants.” (R. 20-4, CFTC Exh. 94, at 17 n.12.)

Ultimately, Defendant Oystacher’s ZN market data revealed that, “[a]t the big-picture level, [Defendant Oystacher was] still creating imbalances in favor of the cancel side. And on average, he [was] still accelerating the magnitude of the imbalance creation as we get closer to the flip.” (*Id.* at 1550–51.)

B. Cancel-Side Versus Trade-Side “Iceberg” Order Usage

Further, Defendant Oystacher’s iceberg usage differed across his cancel and trade-side order entries. Specifically, Defendant Oystacher utilized the iceberg function at a higher rate in his trade-side orders compared to his cancel-side orders. Put differently, Defendant Oystacher displayed a lower percentage of his trade-side order entries and a higher percentage of his cancel-side order entries. This trend occurred in both the full and narrowed sets of data. In the full data set’s Crude Oil market, for example, 94.03 percent of Defendant Oystacher’s overall trade-side orders were icebergs, while only 5.82 percent of his cancel-side orders were icebergs. (R. 20-4, CFTC Exh. 94, at 39.) The same pattern is present in all markets that allowed iceberg orders. Specifically, icebergs comprised 87.23 percent of Defendant Oystacher’s trade-side orders and 2.21 percent of his cancel-side orders in the Natural Gas market; 68.81 percent of his trade-side orders and 5.08 percent of his cancel-side orders in the Copper market; and 66.31 percent of his trade-side orders compared to 2.62 percent of his cancel-side orders in the ES market during June 2013. (*Id.*; Tr. at 1575–76; CFTC Exh. 179) The same trend existed in the narrowed data set: icebergs comprised 96.6 percent of his trade-side orders and 0.63 percent of

his cancel-side orders in the Crude Oil market; 89.34 percent of his trade-side orders and 0.19 percent of his cancel-side orders in the Natural Gas market; 72.94 percent of his trade-side orders and 0.24 percent of his cancel-side orders in the Copper market; and 79.66 percent of his trade-side orders and 0.00 percent of his cancel-side orders in the ES market during June 2013. (R. 20-4, CFTC Exh. 94, at 95–96; Tr. at 1574–75; CFTC Exh. 178.) This data, combined with the disappearing cancel-side iceberg orders detailed above, “shows that [Defendant] Oystacher is using his option to use icebergs or his option to not use icebergs, as the case may be, in a way that would increase the magnitude of the imbalance in the visible order book, particularly in the last second.” (Tr. at 1532, 1575.)

C. Non-Flip Versus Flip “Iceberg” Order Usage

Finally, Defendant Oystacher’s iceberg order usage followed a similar fluctuation between non-flip transactions and trade-side orders after flip events. Particularly, Defendant Oystacher used a statistically lower rate of iceberg orders in non-flip orders than trade-side orders in the markets that allowed such orders. Indeed, iceberg orders made up 94.03 percent of Defendant Oystacher’s trade-side orders and 13.63 percent of his non-flip orders in the Crude Oil market; 87.23 percent of Defendant Oystacher’s trade-side orders and 6.03 percent of his non-flip orders in the Natural Gas market; 68.81 percent of Defendant Oystacher’s trade-side orders and 13.07 percent of his non-flip orders in the Copper market; and 66.31 percent of Defendant Oystacher’s trade-side orders compared to 6.18 percent of his non-flip orders in the ES market during June 2013. (R. 20-4, CFTC Exh. 94, at 39.) As such, Defendant Oystacher’s trade-side orders displayed a lower rate of their contracts compared to his non-flip orders’ displayed quantities.

iii. Price Aggressiveness and Order Execution

A relationship also existed between Defendant Oystacher's price aggressiveness and order execution rates across the various types of order entries. A price can either be "aggressive," otherwise known as "marketable," or "passive" depending on where the price is located compared to the current "bid-ask spread." (Tr. at 1471.) According to Professor Bessembinder, "[a] marketable order is one that has a price that's aggressive enough that it can be matched against a resting order as soon as it arrives at the exchange. So for a marketable buy order, it would be one with a limit price high enough that it matches the price of . . . a resting sell order, and then a marketable order can be executed at least in part as soon as it arrives at the exchange." (*Id.* at 1470–71.) "[A] passive order," however, "is one that's not marketable, cannot be immediately matched upon arrival at the exchange and, therefore, would be placed or rest in the book . . . [b]ecause there's not an opposite-side order with a matching or better price." (*Id.* at 1471.) In sum, "the higher the limit price on a buy order, the more aggressive is the buy order; the lower the limit price on a sell order, the more aggressive is the order." (*Id.*) "If a marketable order arrives that can be executed against orders resting on the book, the [exchanges] have rules for which of the resting orders are executed first. The rule is . . . first in, first out or . . . the queue priority rule. It says that the orders that were resting longest are executed first." (Tr. at 1567.) In addition, "the [b]id-[a]sk [s]pread is the difference between the lowest priced order to sell[, the "best offer,"] and the highest priced order to buy, [the "best bid"]." (R. 1 at 7; Tr. at 1473–74.) Often, the lowest priced order to sell and the highest priced order to buy are, collectively, referred to as the "top of the market," the "best bid and offer," or the "BBO." (*Id.*; Tr. at 1473–74.)

To quantify price aggressiveness, Professor Bessembinder measured the average number of “ticks” Defendant Oystacher’s limit order prices were from the market’s best bid or offer price, depending on what side of the market he was trading on. (R. 20-4, CFTC Exh. 94, at 28.) In other words, he measured the average number of “ticks-to-best” for each of Defendant Oystacher’s order entries. (*Id.*) A “tick” is a unit of measurement used to illustrate the incremental shifts in contract price in each market (i.e. “The movement in price of one ‘tick’ [in the Copper market] results in a change in the value of the contract by \$12.50.”). (R. 1 at 10.) Specifically, the “bid ticks-to-best” is the market’s best bid price at the time of Defendant Oystacher’s order entry minus his limit order price, while the “offer ticks-to-best” is the Defendant Oystacher’s limit order price minus the market’s best offer price at the time of entry. (R. 20-4, CFTC Exh. 94, at 28.) As a result, for both bid and offer orders, the more negative the “ticks-to-best” value, the more aggressive Defendant Oystacher’s prices were. Likewise, the more positive the value, the less aggressive, or more passive, his prices were.

Ultimately, Professor Bessembinder identified a number of price aggressiveness and execution rate patterns in Defendant Oystacher’s trading behavior. Specifically, he explained that Defendant Oystacher 1) priced trade-side orders more aggressively than cancel-side orders and, as a result, executed more of his trade-side orders than cancel-side orders, 2) priced flip orders more aggressively than non-flip orders and, as a result, executed more of his flip orders than non-flip orders, and 3) executed more orders as a result of flips than any other market participants.

A. Cancel-Side Versus Trade-Side Order Price Aggressiveness and Execution

Within flip transactions, across both the full and narrowed data sets, Defendant Oystacher’s average “trade-side order ticks-to-best” was more negative than his average “cancel-

side order ticks-to-best.” Within the narrowed set of data, Defendant Oystacher priced trade-side orders, on average, more aggressively than his cancel-side orders. In the Crude Oil market, for example, Defendant Oystacher’s average “trade-side order ticks-to-best” was -1.71 while his average “cancel-side order ticks-to-best” was 0.23. (*Id.* at 87.) Thus, Defendant Oystacher placed his trade-side orders an average of 1.71 ticks higher (bids) or lower (offers) than the market’s prevailing BBO at the time of entry, making them “aggressive” orders that crossed the “bid-ask spread.” The same price aggressiveness trend existed throughout other markets: Defendant Oystacher’s average “trade-side ticks-to-best” was -1.40 and his average “cancel-side ticks-to-best” was 0.07 in the Natural Gas market; -1.80 and 0.21 in the Copper market; -0.98 and 0.00 in the VIX market; and -1.00 and 0.00 in the ES market during June 2013. (*Id.* at 87–88.)

The same trend existed in Defendant Oystacher’s full data set. Indeed, Defendant Oystacher’s average “trade-side ticks-to-best” was -1.66 and his average “cancel-side ticks-to-best” was 0.21 in the Crude Oil market; -1.27 and 0.20 in the Natural Gas market; -1.41 and 0.27 in the Copper market, -0.99 and -0.02 in the VIX market, and -1.02 and 0.02 in the ES market during June 2013. (*Id.* at 39.)

In light of these price aggressiveness patterns, Defendant Oystacher’s orders also exhibited execution patterns across trade and cancel-side orders. (Tr. at 1586; CFTC Exhs. 180, 181.) Professor Bessembinder “computed . . . the number of contracts executed relative to the number of contracts entered . . . for each event on both the cancel side and the trade side and averaged those across events.” (*Id.*) Within the narrowed set of data, Defendant Oystacher’s “execution rates were much higher on the trade side than on the cancel side.” (*Id.* at 1587; CFTC Exh. 181.) In the narrowed set’s Crude Oil market, for example, Defendant Oystacher’s average

trade-side execution rate was 69.83 percent, while his average cancel-side execution rate was 1.87 percent. The same holds true in at least four other markets: his average trade-side execution rate was 50.76 percent while his average cancel-side execution rate was 0.51 percent in the Natural Gas market; 44.30 percent and 0.89 percent in the Copper market; 37.53 percent and 0.94 percent in the VIX market; and 55.20 percent and 0.17 percent in the ES market during June 2013. (*Id.* at 1586–87; R. 20-4, CFTC Exh. 94, at 30.) “[T]he low execution rates on the cancel side are consistent with the notion that there was intent to not execute at least some of those orders.” (*Id.* at 1589.)

B. Non-Flip Versus Flip Order Price Aggressiveness and Execution

Defendant Oystacher also priced his trade-side trades more aggressively than his non-flip trades in five markets. Specifically, Defendant Oystacher’s average trade-side “ticks-to-best” was -1.66 and his average non-flip “ticks-to-best” was -0.45 in the Crude Oil market; -1.27 and 0.72 in the Natural Gas market; -1.41 and 0.53 in the Copper market; -0.99 and 1.65 in the VIX market; and -1.02 and 0.55 in the ES market during June 2013. (R. 20-4, CFTC Exh. 94, at 39.) Accordingly, Defendant Oystacher priced his trade-side orders at a higher (bid) or lower (offer) price on average than the market’s prevailing BBO at the time of entry, making his trade-side trades more aggressive than his non-flip trades.

Defendant Oystacher’s non-flip and flip orders also presented execution patterns across both the full and narrowed data sets. Here, Professor Bessembinder identified two relevant trends: 1) Defendant Oystacher’s execution rates for his trade-side orders were higher than for his non-flip orders and 2) Defendant Oystacher’s execution rates for his cancel-side order were lower than for his non-flip orders. In the Crude Oil market, for example, Defendant Oystacher’s average non-flip order execution rate was 36.52 percent, his average trade-side order execution

rate was 69.06 percent (69.83 percent within the narrowed data set), and his average cancel-side order execution rate was 4.03 percent (1.43 percent within the narrowed data set). (*Id.* at 95.) Defendant Oystacher's average non-flip order execution rate was 25.20 percent, his average trade-side order execution rate was 50.40 percent (58.86 percent within the narrowed data set), and his average cancel-side order execution rate was 2.17 percent (0.38 percent within the narrowed data set) in the Natural Gas market; 23.88 percent, 43.47 percent (43.33 percent within the narrowed data set), and 3.24 percent (0.75 percent within the narrowed data set) in the Copper market; 18.06 percent, 54.48 percent (37.53 percent within the narrowed data set), and 1.20 percent (0.40 percent within the narrowed data set) in the VIX market; and 32.17 percent, 65.22 percent (55.20 percent within the narrowed data set), and 2.75 percent (0.19 percent within the narrowed data set) in the ES market during June 2013. (*Id.* at 95–96.) Thus, Defendant Oystacher executed his trade-side orders and cancel-side orders at higher and lower average rates, respectively, compared to his non-flip orders.

C. Executed Orders as a Result of Flips Across All Relevant Markets

Finally, not only do Defendant Oystacher's order execution rates illustrate a pattern within his own trading, but also when compared to the rest of the market participants that engaged in flips. Specifically, he had a larger percentage of his executed trades result from flip events than any other market participants in the respective markets at issue. In the Crude Oil market, for example, 45.5 percent of Defendant Oystacher's executed trades overall resulted from flip events. In other words, 45.5 percent of his Crude Oil executed orders were trade-side orders. (*Id.* at 15.) The second largest trade-side order portion in the Crude Oil market, however, was 16.0 percent. (*Id.*) Indeed, he possessed the largest trade-side order portions in other relevant markets: 33.3 percent compared to the second largest 9.9 percent in the Copper

market; 47.7 percent compared to the second largest 28.8 percent in the Natural Gas market; 72.8 percent compared to the 4.6 percent in the VIX market; and 33.2 percent compared to the 27.9 percent in the ES market during June 2013. (*Id.*) Accordingly, “flipping was a very important part of [Defendant] Oystacher’s strategies for obtaining trade executions to a much greater extent than the other traders who engaged in flips.” (Tr. at 1496.)

iv. Cancellation Speed

Furthermore, Defendant Oystacher’s entry-to-cancel times, or cancellation speeds elicited observable patterns. Here, Professor Bessembinder compared 1) Defendant Oystacher’s cancel-side and trade-side order behavior within flip transactions and 2) Defendant Oystacher’s overall non-flip to flip order behavior.

A. Cancel-Side Versus Trade-Side Order Entry-to-Cancel Times

As noted above, Defendant Oystacher’s narrowed orders included nearly 5,300 flip events with average cancel-side order entry-to-cancel times of less than one second. Specifically, his average cancel-side order entry-to-cancel times were 0.54 seconds in the Crude Oil market, 0.58 seconds in the Natural Gas market, 0.62 seconds in the Copper market, 0.66 seconds in the VIX market, and 0.61 seconds in the ES market during June 2013. (R. 20-4, CFTC Exh. 94, at 95–96.) Indeed, some of his cancel-side order entry-to-cancel times were shorter than a quarter of a second. On at least one occasion, for example, he cancelled a Copper market order only 0.217 seconds, or 217 milliseconds, after entering it. (Tr. at 1572; CFTC Exh. 187.) Defendant Oystacher’s average trade-side order entry-to-cancel times, however, were longer: 5.86 seconds in the Crude Oil market, 9.88 seconds in the Natural Gas market, 4.02 seconds in the Copper market, 37.45 seconds in the VIX market, and 12.75 seconds in the ES market during June 2013. (*Id.*)

B. Non-Flip Order Versus Cancel-Side Order Entry-to-Cancel Times

On average, Defendant Oystacher's non-flip order entry-to-cancel times were longer than his cancel-side order entry-to-cancel times across the full data set in five markets. In the Crude Oil market, for example, his average entry-to-cancel time for his non-flip orders was 3.74 seconds, while his average entry-to-cancel time for their cancel-side orders was 1.40 seconds. (*Id.* at 40.) His average entry-to-cancel time for non-flip orders and cancel-side orders were 9.34 seconds and 3.01 seconds, respectively, in the Natural Gas market; 4.76 and 2.41 seconds in the Copper market; 181.38 and 54.41 seconds in the VIX market; and 44.78 and 4.10 seconds in the ES market during June 2013. (*Id.*)

Ultimately, Professor Bessembinder concluded that the findings and overall patterns outlined above supported the spoofing hypothesis. "When one wants to understand patterns and when one wants to understand what's going on in the data at a systematic level, when you get 150 million records, its tough to look at every single record and from the individual records make statements about patterns or what's going on." (Tr. at 1489.) As Professor Bessembinder concluded,

[i]t [is] not informative to look at individual events. Individual events can be . . . cherry picked. Stories . . . can be told about individual events. In a case of this type where we're focusing on the data and letting the data speak, I believe it's the broad and significant pattern that's relevant, not the fact that some individual events selected by some unknown procedure might deviate in some ways from the broad pattern. . . . I think the overall pattern is relevant in assessing the likelihood that an individual event involves spoofing.

(*Id.* at 1607–08.)

2. Defendant Expert Professor Daniel R. Fischel Rebuttal

Professor Fischel is the President and Chairman of Compass Lexecon and the Lee and Brena Professor of Law and Business Emeritus at the University of Chicago Law School and a

highly accomplished economist. (*Id.* at 2097–98.) Compass Lexecon “is an economics consulting firm that specializes in the application of economics primarily to a wide variety of legal and regulatory subjects.” (*Id.*) Professor Fischel has served as the Dean and Director of the Law and Economics Program at the University of Chicago Law School and has held a courtesy appointment at the University of Chicago Graduate School of Business. (*Id.* at 2098.) He has also held academic positions at Northwestern University and an honorary appointment at the Kellogg School of Management. (*Id.* at 2099.)

Professor Fischel holds a bachelor’s degree from Cornell University where he studied economics and history. He attended history graduate school for a couple of years at Brown University before eventually earning his J.D. from the University of Chicago Law School. (*Id.* at 2100.) Ultimately, Professor Fischel entered the field of academics, beginning his career at Northwestern University. (*Id.*)

Throughout the course of his career, Professor Fischel has published two books and approximately fifty articles in legal and economic journals. (*Id.* at 2101.) Specifically, he has written and taught about the economics of manipulation, futures markets, and customer protection. (*Id.*) Professor Fischel has also served as an expert or consultant for numerous government agencies including the Department of Justice, the Securities and Exchange Commission, the banking regulatory agencies, the Department of Labor, the Federal Trade Commission, and numerous exchanges. (*Id.* at 2101–02.) Specifically, Professor Fischel has testified as an expert in approximately 75 trials. (*Id.* at 2103.) Indeed, he has testified in manipulation cases, insider trading cases, and securities fraud cases. (*Id.*)

a. Professor Bessembinder's Alleged Fundamental Flaws

Ultimately, Professor Fischel concluded that Professor Bessembinder's findings are "fundamentally flawed." (*Id.* at 2106.) Specifically, Professor Fischel claimed that Professor Bessembinder's "analysis is characterized by a series of very familiar biases, well-recognized errors in interpreting economic data: [a] confirmation bias, a selection bias[,] and an aggregation bias. And for those reasons, I believe his conclusions are not credible." (*Id.* at 2108.)

First, Professor Fischel asserted that Professor Bessembinder's analysis suffered from "confirmation bias." He explained that

[a] confirmation bias is basically when you have a position and no matter what evidence subsequently comes to light that is inconsistent with that position or raises questions with that position, you simply just reiterate your initial position without taking into account all of the potential reasons why there might be cause to question your initial conclusion.

And I think . . . Professor Bessembinder did that repeatedly. Every time he came up with a test and then when he applied the test to different data, the test didn't work; so, he just . . . tried to interpret the failure of his own test as somehow inconsistent with his initial position.

Every time he said that things that are obviously relevant, such as the relationship between flips and volatility, are irrelevant or uninformative when I think anyone with the most rudimentary understanding of financial markets would recognize that that data is incredibly relevant and informative, and just to dismiss it out of hand rather than to say, well, this raises a question that I need to think about, I need to investigate, those are all examples of confirmation bias.

(*Id.* at 2109–10.)

This challenge, however, is refuted by Professor Bessembinder's methodology.

Specifically, he

[a]pproached this project the same way I approach my academic projects, with an academic skepticism, and with a desire to let the data speak and let the data distinguish between hypotheses.

I was asked to evaluate whether or not the evidence . . . would support the notion that [Defendant] Oystacher had engaged in spoofing. That’s what I referred to as the spoofing hypothesis.

I asked myself, just as I do with my academic papers, I said what are the statistical tests that I can construct, . . . what are the questions that I can pose to the data, if you prefer, that would shed light on this issue, that would allow us to draw some inferences about the likelihood that there was spoofing behavior or not.

My conclusions were not determined before I started. My conclusions were written after I saw what the data had to say.

(Id. at 1484.)

Second, Professor Fischel accused Professor Bessembinder of committing “selection bias.” He explained that

[s]election bias is when you base a conclusion on a certain set of data and you ignore other equally relevant data which, if you looked at [sic], might lead you to a different conclusion. And, again, Professor Bessembinder did that repeatedly.

(Id. at 2110–11.)

Again, however, Professor Bessembinder explained that

The first place where one might mistakenly think there was selection bias is on the fact that I studied 62 specific dates, most of which were identified based on market complaints. If someone made the mistake of saying having studied these 62 dates we now know what [Defendant] Oystacher did on other dates, if someone made that mistake, that would be subject to selection bias. As long as we stay within the 62 dates and everybody understands we’re describing his pattern, his patterns of trading on those 62 dates, there is no selection bias.

Another place where someone might mistakenly believe there’s selection bias is with respect to the narrowed [data] set[.] . . . As long as what we describe about the narrowed set is understood to be description [sic] of the narrowed set and nobody makes the mistake of saying here’s what we see in the narrowed set, this must be true of what [Defendant] Oystacher did at other times, [however,] . . . again, we have no selection bias.

(Id. at 1486–87.)

Finally, Professor Fischel claimed that Professor Bessembinder committed “aggregation bias.” He observed that

[a]ggregation bias is when you draw conclusions from a finding about what exists as an average and equate your conclusion about an average to a set of individual cases that make up the average. And, again, that flaw permeates Professor Bessembinder's analysis.

You know, for example, Professor Bessembinder focused a lot on what he referred to as a pattern of acceleration, a pattern of disappearing icebergs, a pattern of imbalances. All of those claims of pattern [sic] are based on average findings. But the only way to analyze whether a pattern exists is to look at individual transactions to see whether the supposed pattern existed in the individual cases, the individual transactions. . . . Professor Bessembinder's claims about a pattern in each of these three areas collapses because he confused what's true on average with what's true in individual cases.

(*Id.* at 2112.)

As with the previous alleged biases, Professor Bessembinder's approach to his analysis undermines the criticism. He explained that

The sin of aggregation bias only arrives if one is representing that having looked at the average, they now know the facts for every individual. As long as we don't make the mistake of that assumption and don't make that assertion, there's no aggregation bias.

(*Id.* at 1488.)

In sum, given Professor Bessembinder's analytical approach, the Court is not persuaded that these challenges undermine his opinions.

b. Alternative Non-Spoofing Rationales

Professor Fischel also analyzed the market and Defendant Oystacher's trade data and concluded that, "to the extent it's possible to infer intent from conduct, . . . I believe the data is more supportive of . . . the non-spoofing hypothesis than the spoofing hypothesis." (*Id.* at 2106.) Professor Fischel individually analyzed Defendant Oystacher's various trade behaviors, described in Professor Bessembinder's analyses above, and offered several non-spoofing rationales for Defendant's conduct. In doing so, he placed heavy focus on the individual factors upon which Professor Bessembinder relied, but often ignored the impact of all of these factors in

the aggregate. It was clear from Professor Bessembinder’s testimony and analysis that the spoofing factors are relevant when they work together, not in isolation. Ultimately, Professor Fischel’s opinions do not impact the Court’s ruling on the CFTC’s preliminary injunction motion. Defendants are free to present Professor Fischel’s opinions to the jury for the ultimate determination on Defendants’ liability.

F. Gregory O’Connor

Defendants called one 3Red employee—its Chief Compliance Officer, Mr. Gregory O’Connor. Mr. O’Connor has served as 3Red’s Chief Compliance Officer since July 2013. (Tr. at 2030.) As Chief Compliance Officer, Mr. O’Connor oversees compliance for 3Red, handles internal and external inquiries, conducts trading analysis, speaks with exchange and market regulators, and serves as a 3Red liaison for any compliance-related purposes. (*Id.* at 2029–30.) Mr. O’Connor also serves as 3Red’s backup Risk Manager, given the firm’s small size. (*Id.* at 2043.) In that role, he monitors trading risk to ensure that the traders’ strategies do not put the firm in financial jeopardy. (*Id.*) Mr. O’Connor has shared an exclusively business relationship with Defendant Oystacher since beginning at 3Red. (*Id.* at 2357.)

Before 3Red, Mr. O’Connor gained significant compliance experience. From 2003 to 2005, he was a Senior Compliance Investigator at Wachovia, a national broker dealer. (*Id.* at 2036.) Later, from 2005 to 2008, Mr. O’Connor worked as a compliance analyst, reporting to the chief compliance officer, for the New York Stock Exchange (“NYSE”) Arca, a national securities exchange. (*Id.* at 2035.) Eventually, he was appointed as the NYSE Arca’s Director of Compliance. (*Id.*) Further, he served as the Chief Compliance Officer for NYSE Arca’s two subsidiaries. (*Id.*) Specifically, at NYSE Arca, Mr. O’Connor handled the day-to-day compliance needs for the exchange, provided guidance to traders on the exchange’s rules,

learned the exchange's manipulation rules, and wrote some of the exchange's rules himself. (*Id.* at 2035–36.) As the Chief Compliance Officer for NYSE Arca's subsidiaries, he handled all of the regulatory matters. (*Id.*) From 2008 to 2012, Mr. O'Connor was the Compliance Manager and Chief Compliance Officer for Wolverine, a trading firm that had a proprietary trading company, two brokerage firms with clients, and a hedge fund. (*Id.* at 2033–34.) He also served as the Chief Executive Officer for one of Wolverine's brokers. (*Id.* at 2034.) Finally, from 2012 to 2013, Mr. O'Connor served as the Chief Compliance Officer at Allston, a proprietary trading firm that primarily traded a range of futures contracts. (*Id.* at 2031.) Similar to Defendants, Allston traded on a range of futures markets including, in part, fixed income futures contracts on the treasuries market; equity index futures on the ES market; the natural gas market; and the crude oil market. (*Id.* at 2033.) As Allston's Chief Compliance Officer, he handled regulatory inquiries, monitored trading, created surveillance, served as a liaison between the firm and exchanges, and represented the firm on various industry panels. (*Id.* at 2032.)

In July 2013, when Mr. O'Connor began working at 3Red, he immediately began surveilling Defendant Oystacher's trading, developing and implementing trading surveillance reports, reaching out to the exchanges on which 3Red traders traded, and meeting with 3Red's traders on a regular basis. (*Id.* at 2041.) Indeed, Mr. O'Connor began watching Defendant Oystacher's trading every day by plugging Defendant Oystacher's trading activity directly into his computer, allowing him to watch Defendant Oystacher trade live for as long as he wanted. (*Id.* at 2041–42.) Defendant Oystacher would also run new trading strategy ideas by Mr. O'Connor before implementing them. (*Id.* at 2050–53; Def. Exh. D111.) In January 2014, for example, after Defendant proposed one such strategy idea, Mr. O'Connor responded:

Thanks. I have no immediate objections as the keys here appear to be the relatively small size of the orders and the fact that all orders will be hidden,

limiting impact and lowering their priority in the book. . . . Also, with any aspect of the strategy being automated, we will need to verify that the system will not generate an unnecessary number of orders given the volatility at or around the close of the markets. I'm out of the office next week, but keep me posted on any progress before we implement.

(Def. Exh. D111.) Further, Mr. O'Connor "designed . . . restrictions that are imposed on [Defendant] Oystacher, restrictions that he still has today." (Tr. at 2050.) These restrictions include both surveillance reports and compliance tools. Surveillance reports are computer algorithms that collect, summarize, and report trading data based on selected parameters. (*Id.* at 2054–55.) Compliance tools are applications that restrict a market participant's ability to enter trades in various ways. (*Id.* at 2056.) Specifically, Mr. O'Connor designed and implemented the following surveillance reports and compliance tools from September 2013 to February 2016: the "Execution vs. Inside Market 50 Percent Report," the "Execution vs. Inside Market 90 Percent Report," the "Order Bias Report," the "Max Order Size Functionality" tool, the "Large Order Splitter Tool," the "Reduce Prior to Cancel/Replace Tool," the "Max Quantity at Price Tool," the "Dynamic Max Quantity at Price Tool," and the "Delayed Replace for Cancel/Replace Tool." (*Id.* at 2058–78.) This evolution of surveillance reports and compliance tools was based, in part, on information Mr. O'Connor received from his communications with various market exchanges and regulators. (*Id.* at 2353.) According to Mr. O'Connor, Defendant Oystacher has never resisted any of Mr. O'Connor's surveillance or compliance tools. (*Id.* at 2054.)

1. The "Execution vs. Inside Market 50 and 90 Percent Reports"

On September 6, 2013, Mr. O'Connor implemented the first two surveillance reports, the "Execution vs. Inside Market 50 Percent" report and the "Execution vs. Inside Market 90 Percent" report. (*Id.* at 2067–68.) The two reports provide real-time trading alerts to Mr. O'Connor focused on 3Red traders', including Defendant Oystacher's, order sizes. (*Id.* at 2068.)

The “Execution vs. Inside Market 90 Percent” report flags any buy or sell order quantities that are larger than ninety percent of the opposite side best sell or buy order quantities. (*Id.*)

Similarly, the “Execution vs. Inside Market 50 Percent” report flags any order quantities that are larger than fifty percent of the aggregate quantity of the top three price levels on the opposite side. (*Id.* at 2069.) Upon receiving alerts from these two reports, Mr. O’Connor looks at general market data, 3Red’s trades for the day, the flagged order data, and the contextual market data surrounding the flagged order to make notes and address the flagged orders if any compliance issues arise. (*Id.* at 2070–71.)

2. Order Bias Report

On January 27, 2015, Mr. O’Connor implemented the “Order Bias Report,” or the “flipping report.” (*Id.* at 2072.) Mr. O’Connor designed this report to flag any trading activity that could be construed as flipping after the CME published guidance regarding disruptive trading practices that included this “flipping” behavior. (*Id.*) Specifically, the report flags any resting orders that are cancelled and followed by a new order entered at the same price level on the opposite side within ten milliseconds. (*Id.* at 2073.) At the end of each day, this report collects and summarizes each incident and transmits the data to Mr. O’Connor’s computer. (*Id.* at 2072–73.) Similar to the “Execution vs. Inside Market 50 and 90 Percent” reports, Mr. O’Connor reviews this data and surrounding market data to ensure compliance with external and internal regulations. (*Id.* at 2073.)

3. Max Order Size Functionality

In January 2015, Mr. O’Connor also implemented his first compliance tool for Defendant Oystacher’s trading in particular, namely the “Max Order Size Functionality.” (*Id.*) The “Max Order Size Functionality” tool restricts Defendant Oystacher’s displayed order size by setting a

cap on the maximum number of contracts a single order could include. (*Id.* at 2073–74.) Indeed, Mr. O’Connor establishes a static whole number cap based on market characteristics and, if Defendant Oystacher’s contract quantity exceeds it, the tool automatically converts the excess contracts into iceberg orders with hidden quantities and lower queue priority. (*Id.*) If Mr. O’Connor set the limit at 250 contracts, for example, “and [Defendant Oystacher] attempted to enter an order for . . . 1,000 contracts, all that can be shown on that order was 250 contracts, and everything else was turned into an iceberg, so the other 750 were hidden.” (*Id.* at 2074.)

4. Large Order Splitter Tool and Reduce Prior to Cancel/Replace Tool

On May 27 and May 28, 2015, Mr. O’Connor implemented a two-pronged compliance measure, the “Large Order Splitter Tool” and the “Reduce Prior to Cancel/Replace Tool,” that restricts Defendant Oystacher’s order size and speed, respectively. (*Id.*) The first tool, the “Large Order Splitter Tool,” automatically breaks up Defendant Oystacher’s larger orders into three equal smaller orders. (*Id.* at 2075–76.) The second tool, the “Reduce Prior to Cancel/Replace Tool,” causes Defendant Oystacher’s wash blocker⁸ to only cancel a portion of those three orders when he places orders on the opposite side. (*Id.*) Then, only after the market registers those cancellations, the wash blocker cancels the rest. (*Id.*) Specifically, according to Mr. O’Connor,

if [Defendant Oystacher] tried to enter an order for 1,000 contracts and showed 250, this tool actually split that order up into three orders. And the reason for that is in the event he later wanted to cancel those orders, the system would look at his orders resting in relation to the market, try to cancel a large portion of them first, wait for the exchange to acknowledge or confirm that those orders had been cancelled. The intention there, trying to give everybody else the head start, that interest is leaving this price, and then the rest of the [wash blocker] action would

⁸ According to Mr. Wasko, the former CGTA market participant, a wash blocker is “a feature provided by the exchange that will allow you the choice if you’re going to potentially trade at a level that you have orders on the others side of. It allows you the choice to either cancel your aggressive orders or your passive order.” (Tr. at 429.) Defendant Oystacher understood that the “wash blocker . . . prevents people from trading with . . . themselves.” (*Id.* at 836.)

finish, meaning the new order, let's say the sell order was going in and cancel[ing] the rest of the resting buy order.

(*Id.* at 2075.) This two-pronged tool also works in conjunction with the “Max Order Size Functionality” tool. (*Id.* at 2077.) As such, Mr. O'Connor's January and May 2015 tools restrict Defendant Oystacher's maximum displayed order size, maximum order size, and flip speed. (*Id.*)

5. Max Quantity at Price Tool

On November 10, 2015, Mr. O'Connor implemented the “Max Quantity at Price Tool.” (*Id.*) He created this tool as another attempt to restrict Defendant Oystacher's order size. Instead of focusing on Defendant Oystacher's size on an individual order basis, however, the “Max Quantity at Price Tool” limits the quantity Defendant can show at an individual price level. (*Id.*) Similar to the “Max Order Size Functionality” tool limiting Defendant Oystacher's displayed order size in an individual order, this tool establishes a quantity cap at a price level and automatically converts any excess contracts into icebergs. (*Id.* at 2077–78.) This tool, similar to the previous size-restriction tools, operates with whole number maximum limitations. (*Id.* at 2078.)

6. Dynamic Max Quantity at Price Tool

On February 16, 2016, Mr. O'Connor implemented the most up-to-date size-restriction tool, the “Dynamic Max Quantity at Price Tool.” (*Id.* at 2058.) This tool is an upgrade to the size-restriction tools described above. All of the tools, however, are still in place. (*Id.* at 2078.) Like its predecessors, this tool is primarily aimed at limiting the size of Defendant Oystacher's orders. This tool, however, establishes an ever-changing quantity cap based on percentages and market circumstances. Specifically,

[T]his tool . . . does a calculation every 10 seconds. And it does that by looking at six prices in the market. The . . . second, third, and fourth best bid, and . . . the second, third, and fourth best offer. So what the system is doing is looking at those price levels and the quantity displayed by the market as a whole, excluding [Defendant], and coming up with the average. So if the average is 100 contracts, then 10 percent of that would be 10 contracts, and that would be the limit or the maximum shown quantity [Defendant Oystacher] can place . . . at any price in the market in that market. . . . [I]f he submitted an order for 50 contracts, that order would only show 10, and the other 40 would be turned into an iceberg. It would be in reserve.

(*Id.* at 2059–60.) This tool uses the second, third, and fourth price levels and excludes the BBO, as it is “an unstable price” that consists of the “most volatile prices in the market.” (*Id.* at 2067.)

Mr. O’Connor implemented this size restriction to assuage the concerns of regulators and other market participants:

[S]ince I’ve been on board [with 3Red], you know, and even specifically with a case like this, there’s been a focus on his order size. I think the CFTC has actually used the phrase “bait-and-switch” in terms of the size that he’s used, so we’ve . . . worked to reduce his order size, allowing him to stay competitive at the best prices in the market where he places his orders, but we made this change in February after a few iterations. And this is, in my mind, an extreme measure in terms of the restriction of his trading.

. . .

[H]e’s still making decisions on the prices that he wants to trade at; but in the scenarios that seem to be selected where he’s cancelled his orders before they get filed, this [tool] is designed to minimize the perception or the impact that I’d say our competitors have said larger orders impose on the market.

(*Id.* at 2061.) This tool currently restricts Defendant Oystacher’s order sizes in every futures market he trades in and functions as a default limitation that Defendant cannot avoid. (*Id.*)

7. Delayed Replace for Cancel/Replace Tool

On February 16, 2016, Mr. O’Connor also implemented the “Delayed Replace for Cancel/Replace Tool,” upgrading previous speed-restriction tools detailed above. (*Id.* at 2062.)

Indeed, like its predecessors, this tool limits Defendant Oystacher’s trading speed by focusing on Defendant Oystacher’s wash blocker use. (*Id.* at 2064.) According to Mr. O’Connor,

obviously with this case, the CFTC has used the term “near simultaneously,” and some of the examples we discussed with the exchange also seemed to have a speed relationship in terms of those events. So what we did is we actually tried to slow it down, and we put in a mandatory delay in the event [Defendant] were to change his bias in the market and the wash blocker would be enacted.

...

There was a perception that because with the combination of the large orders that [Defendant] uses, the ones that don’t trade when he cancels them, and the speed at which technology can handle order management—which I think that’s why the phrase “nearly simultaneously” has been used—the cancellation of those orders are what—the implication is that he’s misleading people, . . . [and] that’s not his intention, that’s not what I’ve ever understood his intention to be, so we put in a delay to remove that perception of the activity, especially for the orders that are at the best bid and offer.

(*Id.* at 2063–65.) After Mr. O’Connor originally set the delay for two hundred and fifty milliseconds, Defendant Oystacher requested Mr. O’Connor increase it to one full second. (*Id.* at 2065.) According to Mr. O’Connor,

[O]ne second is an eternity. . . . I’m sure our competitors have used intervals of time significantly smaller than this and called it an eternity, so I think calling it an eternity is accurate.

...

[I]t’s fairly common in this industry to understand that we operate in a microsecond precision, which is a millionth of a second. The speed at which the wash blocker that he was using before is that it was—the two orders or the two actions[, the cancellation and opposite-side order entry,] were occurring within single milliseconds. And, again, just our general understanding of the industry, milliseconds is predominantly enough time for the industry to react, but we took it to the extreme and just went out to a full second to ensure that we could try to cover as much of our competitors as possible.

(*Id.* at 2066.) As noted above, this tool, along with the rest, is currently in place and implements a default limitation on Defendant Oystacher’s trading that he cannot remove or manipulate.

Defendants have received no Eurex complaints since January 2015. (*Id.* at 2354.) Further, since implementing the “Dynamic Max Quantity at Price Tool” and the “Delayed Replace for Cancel/Replace Tool” in February 2016, Defendants have received no CME complaints. (*Id.*)

II. Based on Defendants’ Trading Limitations and the Court’s Additional Imposed Limitations, the CFTC Has Not Demonstrated a Reasonable Likelihood of Future Violations Between Now and the Trial Date

As noted earlier, the CFTC must not only demonstrate a prima facie case that Defendants committed a violation, but also show that there is “some reasonable likelihood of future violations.” *Hunt*, 591 F.2d at 1220 (citing *Advance Growth Capital, Corp.*, 470 F.2d at 54.) “The purpose of injunctive relief is, after all, not to punish but to deter future violations, thus insuring general compliance with the broad remedial design of the legislation.” *Advance Growth Capital, Corp.*, 470 F.3d at 54 (citing *Hecht Co.*, 321 U.S. at 329 (“The historic injunctive process was designed to deter, not to punish.”)); *see also* Theodore D. Edwards, *Of Truth, Pragmatism, and Sour Grapes: The Second Circuit’s Decision in SEC v. Citigroup Global Markets*, 65 Duke L. J. 1241, 1249 (2016) (“[I]njunctive relief has always been intended to deter future conduct, not to punish past conduct.”) (footnote omitted). “[T]he moving party must satisfy the court that relief is needed. The necessary determination is that there exists some cognizable danger of recurrent violation, something more than the mere possibility which serves to keep the case alive.” *United States v. Di Mucci*, 879 F.2d 1488, 1498 (7th Cir. 1989) (quoting *W. T. Grant Co.*, 345 U.S. at 633). Importantly, “past misconduct does not lead necessarily to the conclusion that there is a likelihood of future misconduct[.]” *Hunt*, 591 F.2d at 1220; *see also Lifewatch, Inc.*, 2016 WL 1315063, at *23. While past misconduct can be “highly suggestive of the likelihood of future violations, . . . the court should look to the ‘totality of the

circumstances” before drawing any inferences. *Hunt*, 591 F.2d at 1220 (quoting *Mgmt. Dynamics, Inc.*, 515 F.2d at 807); *see also Lifewatch, Co.*, 2016 WL 1315063, at *23. Put differently,

[T]he tentacles of equity are not completely disengaged by statute: the agency still must show possibility of future violation, for the injunction’s purpose is to prevent, not to punish. Even in the face of the apparently mandatory provision in the Emergency Price Control Act for an injunction upon showing of past violation, [for example,] the Supreme Court held in *Hecht v. Bowles* that judges retained discretion to refuse an injunction which they found unnecessary to assure the defendant’s future compliance. . . . [C]ourts have usually lightened the agency’s burden by drawing from past violations an inference that injunctive relief is necessary to prevent future disobedience, with *discretionary denial limited to cases where the defendant overcomes the inference by clearly reliable promises that violations will not recur.*

The Statutory Injunction as an Enforcement Weapon of Federal Agencies, 57 YALE L. J. 1023, 1027–28 (1948) (citing *Hecht, Co.*, 321 U.S. 321) (emphasis added). Thus, in determining whether there is a reasonable likelihood of future violations, the Court reviews the totality of the circumstances.

The Court is concerned that numerous exchanges have warned and sanctioned Defendants for their improper trading activities, yet Defendants have continued to engage in such activity. This includes the NYMEX investigation, the COMEX investigation, the various ICE investigations, the numerous Eurex investigations, fines, and bans, and the number of CME investigations and warnings. The evidence shows that Defendant Oystacher was aware of all of these investigations and warnings. Nonetheless, the Court must look to the totality of the circumstances in determining whether a preliminary injunction is warranted here.

One such circumstance is Mr. O’Connor’s effort to put controls in place to monitor and prevent Defendants’ improper trading activities and his ongoing efforts to monitor, in particular, Defendant Oystacher’s trading activities. Although “[i]t is well settled that a defendant’s

voluntary cessation of a challenged practice does not deprive the federal court of its power to determine the legality of the practice[.] . . . such abandonment is an important factor bearing on the question whether a court should exercise its power to enjoin the defendant from renewing the practice[.]” *City of Mesquite v. Aladdin’s Castle, Inc.*, 455 U.S. 283, 289, 102 S. Ct. 1070, 71 L. Ed. 2d 152 (1982). Indeed, “[t]he chancellor’s decision is based on all the circumstances; his [or her] discretion is necessarily broad and a strong showing of abuse must be made to reverse it. To be considered are the *bona fides of the expressed intent to comply, the effectiveness of the discontinuance* and, in some cases, the character of the past violations.” *W. T. Grant Co.*, 345 U.S. at 633 (emphasis added); *see also Di Mucci*, 879 F.2d at 1498 (“Numerous factors . . . are to be considered in determining whether injunctive relief is appropriate[.] . . . These factors include the bona fide intention of the party found guilty of discrimination to presently comply with the law, [and] the effective discontinuance of the discriminatory practices in question[.]”) (citing *W. T. Grant Co.*, 345 U.S. at 633). Put differently, courts assess whether a defendant’s discontinuance reflects a genuine intent to comply with the relevant statutes and regulations and whether it is effective. *See Di Mucci*, 879 F.2d at 1498.

A defendant’s corrective measures aimed at ensuring such compliance provide a valuable litmus test. Notably, such efforts can overcome inferences drawn from past violations in determining whether there is a reasonable likelihood of future violations. Specifically,

a strong showing of voluntary discontinuance materially bolsters the defendant’s promise of compliance. In actions for a temporary injunction, where the main issue is whether violations threaten *pendent lite*, mere discontinuance antedating the complaint may suffice. . . . *Even in the absence of such alacrity, a defendant may avoid judicial prohibition by a showing that he has ‘effectively’ altered his position and adopted measures ‘adequate’ to insure compliance*—criteria sufficiently vague to give the court wide leeway in determining whether its mandate is necessary to forestall possible resumption of illegal activity.

The Statutory Injunction as an Enforcement Weapon of Federal Agencies, 57 YALE L. J. at 1028–29 (emphasis added). Indeed, “[i]n each of these cases, although the scope of the past alleged violations differed, the courts found that expectations of future violations which would substantiate the need for an injunction were *muted by corrective activities*.” *SEC v. Cenco, Inc.*, 436 F. Supp. 193, 198–99 (N.D. Ill. 1977) (citing cases) (emphasis added); *see also Brown v. Board of Ed. of City of Chicago*, 386 F. Supp. 110, 125 (N.D. Ill. 1974) (citing Wright & Miller, *Federal Practice and Procedure* § 2942 at Vol. 11, pp. 371–73) (“The rule is well settled that the extraordinary writ of injunction will not issue for the purpose of punishing past offenses, but will issue only in those cases where the court is convinced that such relief is necessary to prevent future violations. . . . Thus, a federal court of equity when dealing with state action, statutes or ordinances generally should not issue an injunction when the alleged activity has stopped and there is a bona fide intention not to resume it.”). A defendant’s corrective measures are particularly indicative of an intent to comply when they are adverse to his interests. In sum, the Court must look to the totality of the circumstances to determine whether Defendants’ adopted corrective measures exhibit an intent to comply with the statutes and regulations at issue and whether the measures are effective in ensuring such compliance. Moreover, the focus is on whether such measures will be effective between now and the time of trial, as a preliminary injunction remains in place only until a trial on the merits of the underlying activity. *See Pampered Chef v. Alexanian*, 804 F. Supp. 2d 765, 770 (N.D. Ill. 2011) (“[T]he purpose of a preliminary injunction is merely to preserve the relative positions of the parties until a trial on the merits can be held.”) (quoting *Univ. of Texas v. Camensich*, 451 U.S. 390, 395, 101 S. Ct. 1830, 68 L. Ed. 2d 175 (1981) (citing *Progress Dev. Corp. v. Mitchell*, 286 F.2d 222 (7th Cir. 1961))); *see also G.G. ex. Rel. Grimm v. Gloucester County School Bd.*, No. 15-2056, 2016 WL 1567467,

at *9 (4th Cir. April 19, 2016); *Lifewatch, Inc.*, 2016 WL 1315063, at *2; *Bierman v. Dayton*, 817 F.3d 1070, 1072–73 (8th Cir. 2016); *Jonibach Mgmt. Trust v. Wartburg Enters., Inc.*, 750 F.3d 486, 491 (5th Cir. 2014); *Meridian Mut. Ins. Co. v. Meridian Ins. Grp., Inc.*, 128 F.3d 1111, 1119 (7th Cir. 1997) (citing *Univ. of Texas v. Camensich*, 451 U.S. 390, at 395).

Here, while Defendant Oystacher’s prior conduct and continued trading activities after multiple warnings, investigations, and sanctions trouble the Court, the totality of the circumstances do not warrant a preliminary injunction. The CFTC has not presented any evidence or argument that Defendant Oystacher is not complying with Defendants’ self-implemented restrictions. Mr. O’Connor, with an independent, credible background in compliance, implemented and is enforcing these measures. The CFTC did not identify any motivations such as a prior friendship or large bonus payments or salary that might undercut Mr. O’Connor’s credibility or the legitimacy of these measures. Furthermore, combined with these measures, the Court notes three additional significant factors: 1) the trial date in this case is only approximately six months away, 2) the Court is imposing additional limitations and requirements on Defendants to ensure compliance between now and the time of trial, and 3) Defendant Oystacher is currently only trading on two exchanges, and the Court orders that he only trade on these two exchanges through the trial in this case. Ultimately, Defendants’ self-implemented corrective measures, supplemented with the Court’s additional requirements and the limited time until trial, render future violations unlikely. Given this combination of factors, the Court declines to impose a preliminary injunction.

Specifically, Defendants’ self-implemented tools significantly restrict both Defendant Oystacher’s trading size and trading speed. Defendants have implemented, among others, the “Dynamic Max Quantity at Price Tool” and the “Delayed Replace for Cancel/Replace Tool”—

compliance tools to self-monitor and regulate Defendant Oystacher’s trading size and speed, respectively. Importantly, these two trading characteristics are fundamental to Defendants’ ability to violate the relevant statutes and regulations, enhancing the effectiveness of Defendants’ discontinuance. All of the compliance tools Defendants have self-implemented are adverse to their interests. These tools aim to prevent Defendant Oystacher from successfully engaging in a “bait and switch flipping scheme.” (R. 175-1 at 5.)

A. Trading Size Restrictions – The “Bait”

Defendant Oystacher’s trading is subject to significant size restrictions, impeding his ability to “bait” other market participants. As Professor Bessembinder explained, Defendant Oystacher’s trading size, and resulting displayed order imbalance, can be broken down into his 1) order quantity and 2) iceberg usage. Both of these factors are integral to the CFTC’s spoofing claims. Defendants’ self-implemented size-restriction tools address both.

1. Defendant Oystacher’s Displayed Order Quantities

Notably, Defendant Oystacher’s displayed order quantities are fundamental to the charged spoofing scheme. Indeed, the CFTC has asserted that Defendants engaged in spoofing “and “created . . . false market appearance of market depth and pressure by the *large number and/or size* (in number of contacts) of the spoof order(s) they placed.” (R. 1 at ¶ 56, emphasis added.) As a result, “[t]hese *large* spoof orders deceptively encouraged other market participants (and their algos programmed to react to changes in book pressure) to enter orders on the same side of the market as spoof orders.” (*Id.* at ¶ 59, emphasis added.) Indeed, the CFTC noted that Defendants “were the *largest traders* in the respective contracts for copper, natural gas, VIX, and E-Mini S&P 500 futures, and the third largest trader in the spot-month contract for crude oil futures (as measured by number of contracts traded) during these periods, despite the presence of

thousands of other traders in these markets.” (*Id.* at ¶ 4, emphasis added.) Specifically, the CFTC contends, and Professor Bessembinder demonstrated, that

[t]he data reveals that [Defendant] Oystacher’s cancel (spoof) side order entries were large relative to the quantity of orders already existing on the book prior to [Defendant] Oystacher’s entries. For example, on average, [Defendant] Oystacher’s cancel (spoof) side orders in the charged flips were between 4.77 (in the heavily traded ES market) to 18.77 times as large as the quantity of contracts already on the order book at the same price level (or a better price level). As a result, market participants observed a sudden and dramatic increase in trading interest on that side of the market.

(R. 20-1 at 19; R. 20-4, CFTC Exh. 94, at 31; Tr. at 1570.) Order quantities are integral to luring in potential market participant victims and, ultimately, deceiving them into placing orders.

Professor Bessembinder also highlighted the importance of Defendant Oystacher’s displayed order quantities—particularly in relation to “displayed order imbalance.” Indeed, Professor Bessembinder stressed that “quantities matter in these markets[.]” (Tr. at 1493.) Put differently, Professor Bessembinder testified that,

[t]he relevance of a spoofing strategy is that the entry of the spoof orders on one side of the market creates what can be and I think has been termed an imbalance, an imbalance in the limit order book. It’s plausible, even likely, that people observing the book . . . will interpret an imbalance in the book as a change in supply and demand conditions in the markets, so any imbalance on the buy side is quite plausibly interpreted as increasing demand and vice versa. . . . You’re trying to generate a reaction, is the general point, and the order imbalance is the method of generating the reaction. . . . A large imbalance is more noticeable than a small imbalance, other things equal. So . . . quantities matter. . . . I think it’s reasonable that, in general, the bigger the imbalance, the more likely it’s going to get a reaction. . . . The market is unlikely to react to a fake that’s too small to notice, too subtle to notice.

(Tr. at 1464; 1493; 1558; 1843; 1848.) “[R]elatively small quantities on the cancel side,” he explained, “have little effect on the observable imbalance in the limit order book, are less likely to lure other traders into responding, are less likely to be effective as a spoofing strategy, and are less threatening to market integrity.” (R. 134, CFTC Exh. 95, at 12.) As such, Professor

Bessembinder used Defendant Oystacher's displayed order quantities, among other characteristics, to filter Defendant Oystacher's order entries for spoofing events. Doing so, according to Professor Bessembinder, revealed that "the combined size of the cancel-side orders placed by Defendant Oystacher was indeed very large relative to the quantity of displayed orders already in the limit order book at the event price or better[.] . . . In particular, the size of [Defendant] Oystacher's cancel-side contract entries ranged from an average of 4.8 times as large (E-Mini S&P 500 during April and May, 2015) to 17.0 times as large (VIX), 17.1 times as large (Natural Gas)[,] and 18.8 times as large (Copper) as the quantity of orders already displayed in the limit" (*Id.* at 19.) As a result, Professor Bessembinder concluded, "the data indicates that [Defendant] Oystacher's cancel-side order entries in aggregate were large enough to create very sharp imbalances in the limit order data observed by other market participants, consistent with the spoofing hypothesis." (*Id.* at 20.)

Richard May, one of the CFTC's market participant witnesses, also highlighted displayed order quantities as a key element leading him to believe that he had observed spoofing. Indeed, Mr. May testified that "the addition of *large size*" is the "single biggest thing that [was] going on" in the trading he reported to the CFTC. (Tr. at 89, emphasis added.) Displayed order quantities are important to Mr. May and Citadel's algorithms "because it is how [they] estimate what true buying and selling interest is. The markets work—basically, if there are more buyers than sellers, the prices go up. If there are more sellers than buyers, the prices go down. And the only way [they] have to gauge whether there are more buyers or sellers is by looking at the displayed order sizes to buy and the orders to sell." (*Id.* at 208.) Mr. May explained that Citadel's "trading strategies rely on book pressure and the book pressure is determined by the amount of buying and selling interest displayed in the market." (*Id.* at 50.) "So, if I believe that

someone is adding fake size in order to misrepresent buying and selling interest,” he concluded, “I know we are going to have a problem.” (*Id.* at 50–51.) Explaining the trading behavior he found suspicious, Mr. May recounted that “the amount of size being added accounted for more than the rest of the market combined.” (*Id.* at 24.)

2. Defendant Oystacher’s Iceberg Usage

In addition, Defendant Oystacher’s iceberg order usage affected his trading size and, particularly, any displayed imbalance in his limit order book. According to Professor Bessembinder, “when the iceberg option is not used, we know that the order was fully displayed to the market. If the iceberg option is used, only a portion of the order is displayed to the market.” (*Id.* at 1530.) Further, “one way to increase the size of an order imbalance is to fully expose, to not use the iceberg option.” (*Id.* at 1850.) Using icebergs, however, can reduce the luring effect of any displayed imbalance for the same reasons—the contracts in iceberg orders are not displayed to the rest of the market but, instead, are concealed. “What’s displayed is most relevant, I think, yeah, by far what – the displayed imbalance. That’s what others can readily react to. So, it’s the displayed imbalance that’s the most relevant.” (*Id.* at 1853.) Consequently, Professor Bessembinder highlighted that, in certain circumstances, using icebergs can be antithetical to a spoofing scheme. “[G]oing back to the sports analogy,” he explained, “if your opponent doesn’t see your fake, it’s not going to work. People don’t react to what they don’t detect. If the order imbalance is big, but the iceberg function is used to hide most of the size, it’s unlikely you’re going to get a reaction. People don’t react to what they can’t see.” (*Id.* at 1529.)

3. Defendants' Self-Implemented Restrictions Effectively Address Defendant Oystacher's Trading Size

Defendants' size restrictions limit Defendant Oystacher's ability to "bait" market participants with a displayed order imbalance by restricting Defendant Oystacher's order quantities and increasing his iceberg usage.

Specifically, the "Dynamic Max Quantity at Price" compliance tool sets a cap on Defendant Oystacher's trading size at a particular price level. The aggregate sum of Defendant Oystacher's order quantities at one price level cannot amount to any more than ten percent of the average quantities displayed in the order book at the second, third, and fourth price levels on both the market's bid and offer sides. If the average contract quantity displayed in the order book is one thousand contracts at the six best price levels, excluding the BBO, for example, Defendant Oystacher can only place orders for a maximum aggregate sum of one hundred contracts at one price level. When Defendant Oystacher's total ordered contracts breach the tool's implemented cap at a particular price level, the excess contracts automatically transform into iceberg orders with concealed size and lower queue priority.

Further, the "Dynamic Max Quantity at Price Tool" works in conjunction with Defendants' self-implemented "Max Order Size Functionality" tool and "Large Order Splitter Tool." Rather than limit Defendant Oystacher's order size at a price level, however, these two compliance tools restrict Defendant Oystacher's order size on an individual order basis. Specifically, the "Max Order Size Functionality" tool sets a cap on the size of any one of Defendant Oystacher's orders using absolute numbers, as opposed to percentages. In other words, if Defendant Oystacher places an order for a contract quantity that exceeds a pre-set cap, the excess contracts automatically transform into an iceberg order. The "Large Order Splitter Tool" limits Defendant Oystacher's trading size by splitting orders with larger contract quantities

into three smaller orders. If Defendant Oystacher places an order for nine hundred contracts, for example, and there is a pre-set cap on each order of two hundred contracts, the “Large Order Splitter Tool” would split the order into three orders for three hundred contracts each, and the “Max Order Functionality” tool would automatically make each order display only two hundred contracts, converting the remaining one hundred contracts into an iceberg order. In sum, these three compliance tools function together to automatically restrict Defendant Oystacher’s displayed order size and queue priority on both a price level and individual order basis, thereby restricting his ability to manipulate the market.

The CFTC contends that Defendant “Oystacher can still enter orders magnitudes larger than the BBO—indisputably the most important level traders consider and what the market participants complained about here. He can do so because Defendants configured the tool to calculate the ‘norm’ based on the average of three price levels *away* from the BBO (which are typically factors larger than the BBO) calculated over a ten second period[.]” (R. 175-1 at 37.) The quantity at the BBO, however, “tends to be the most fluid or volatile.” (Tr. at 2377.) Professor Fischel agreed, explaining that “prices are moving all over the place, which is what volatility means—and particularly when you’re dealing with such narrow intervals between the BBO on the trade and the cancel side[.]” (*Id.* at 2216.) Although the CFTC alleges that the contract quantities at the BBO are “typically” smaller than the other price level quantities, Mr. O’Connor credibly notes that they can also “match or be equal to or even greater than prices away.” (*Id.*) Accordingly, the BBO contract quantities may serve as a poor baseline for a tool meant to establish a maximum cap on Defendant Oystacher’s displayed order size based on surrounding quantities. The current tool provides more certainty.

Further, the CFTC specifically alleges, and Professor Bessembinder demonstrated, that Defendant Oystacher entered fully displayed, passive orders “at *or near* the prices of the highest existing order to buy or the lowest existing order to sell (the BBO).” (R. 20-1 at 18, emphasis added.) Indeed, the CFTC stressed that Defendant Oystacher’s “spoof” orders near the BBO were intentionally “passive,” to avoid execution and market risk. (*Id.*, “[Defendant] Oystacher also placed the cancel (spoof) orders in such a manner to reduce the risk of execution before he wanted to flip by making them passive orders that would rest (get in line) behind existing orders.”) Notably, the CFTC defines “passive” orders as those “placed at the same *or worse* price than [the BBO].” (*Id.* at 12, emphasis added.) Thus, using the price levels near the BBO appropriately ensures Defendant Oystacher’s order sizes mirror the surrounding order quantities in the limit order book. In addition, the compliance tool does not “include [Defendant Oystacher’s] orders into the average” of the top six price level quantities, excluding the BBO. (Tr. at 2420.) “So, [it] only include[s] what the . . . rest of the market is showing.” (*Id.*) Therefore, the quantities the tool uses to restrict Defendant Oystacher’s maximum order cap are even smaller than the aggregate quantities displayed in the limit order book.

Finally, even if Defendant Oystacher is still able to enter orders of a magnitude capable of luring other market participants, as the CFTC contends, the “Delayed Replace for Cancel/Replace Tool” would limit Defendant Oystacher’s ability to successfully engage in the charged spoofing scheme. As Mr. O’Connor explained, “that’s where the delay—the mandatory delay—that I created and put into places comes into effect. So, even if [Defendant Oystacher] were to place a maximum [order] of 274 [contracts] . . . at the best offer . . . even if he were to cancel those and become a buyer at that price, the one-second delay would add that interval so the market can see that interest leave the market.” (*Id.*) This one-second delay “back-up” tool

addresses Professor Bessembinder’s concern that Defendant Oystacher’s “cancellation and the entry of the opposite-direction order . . . often had exactly the same time stamp[.] . . . The very large majority of the cases, the orders on the two sides had the same or . . . one millisecond difference in their time stamps.” (*Id.* at 1480–81.) As a result, the “Dynamic Max Quantity at Price Tool” is not toothless. Instead, it successfully functions, together with Defendants’ other tools, to restrict Defendant Oystacher’s trading.

B. Trading Speed Restrictions – The “Switch”

Defendant Oystacher’s trading is also subject to significant, self-imposed speed restrictions, encumbering his ability to “switch” the market and benefit from the charged scheme. Specifically, Defendants’ self-imposed speed limitations target Defendant Oystacher’s “flip speed.”

1. Defendant Oystacher’s Flip Speed

Similar to displayed order size, a trader’s flip speed is fundamental to the charged conduct. Indeed, the CFTC has highlighted Defendant Oystacher’s flip speed as an important factor in both the CEA and CFTC Regulation charges. Describing their “manipulation” Regulation charge, the CFTC highlighted that “Defendants’ use of the [wash blocker] to *virtually simultaneously* cancel their spoof orders and flip to aggressively take the other side of the market (and trade with those induced to enter the market by the initial orders they canceled), constitutes employment of a device, scheme, artifice, or contrivance that was both deceptive and manipulative.” (R. 1 at 29, emphasis added.) Further, the CFTC illustrated that Defendant Oystacher’s order speed was integral to the charged spoofing scheme, calling it the “second leg of his deceptive scheme.” (R. 175-1 at 38.) The CFTC further explained that “Defendants’ pattern of placing visible passive (spoof) order(s) for a large number of contracts, at or near the

best bid or offer price, then *simultaneously canceling them and flipping to aggressively take the other side of the market* at the same or better price demonstrates their intent, at the time they placed them, to cancel these spoof orders prior to execution.” (R. 1 at 28, emphasis added.) Indeed, according to the CFTC, “Defendants’ cancellation of the spoof orders and ‘flip’ to the other side happened *almost simultaneously, taking place in less than or equal to 5 milliseconds (i.e. thousandths of a second)*. (*Id.* at 18, emphasis added.) Specifically, the CFTC explained,

[Defendant] Oystacher chose to configure his [wash blocker] to cancel the resting (*i.e.*, spoof) orders. He then exploited the [wash blocker] by deliberately placing orders in the opposite direction of his cancel (spoof) orders, which he knew would *virtually simultaneously* cancel the spoof orders with a single keystroke (the ‘flip’). Deliberately exploiting the [wash blocker] in this manner (rather than employing it as a failsafe) allowed [Defendant] Oystacher to *flip more quickly* than he could otherwise manually enter a new order and then individually cancel multiple (spoof) orders that were already resting. . . . [B]ecause there are inherent delays with the market updates provided to market participants and because of the speed with which order messages enter the market (sometimes referred to as ‘latency’), [Defendant] Oystacher’s misuse of the [wash blocker] cancelled and placed flip orders *before* other market participants (including algorithmic traders) had time to recognize that [Defendant] Oystacher’s cancel (spoof) orders did not reflect genuine interest. This allowed [Defendant] Oystacher’s aggressive flip orders to trade against them.

(R. 20-1 at 15, emphasis added.) It is clear that Defendant Oystacher’s flip speed was integral to the charged conduct. It enabled him to benefit from the cancelled orders by trading on the opposite side of the market before other market participants had time to respond to his cancelled orders. The “Delayed Replace for Cancel/Replace Tool” limits this aspect of the trading activity.

Professor Bessembinder also described the importance of Defendant Oystacher’s flip speed in the charged scheme’s effectiveness. “This matter,” he noted, “focuses specifically on ‘flips,’ defined as the cancelation of one or more orders (cancel side of flip) and the *essentially simultaneous* entry of one or more opposite-direction orders (trade side of flips) at the same price or a more aggressive (higher for newly entered buy orders or lower for newly entered sell orders)

price.” (R. 134, CFTC Exh. 95, at 3, emphasis added.) “[F]lips that involved a longer time horizon between cancelation and opposite-side order entry (to the extent that such exist),” Professor Bessembinder explained, “would likely be less effective as a spoofing strategy, since such delays would potentially allow traders who had been fooled by the spoof orders to react to their cancelation.” (R. 134, CFTC Exh. 95, at 10.) Instead, Professor Bessembinder “observed that the cancellation and the entry of the opposite-direction order . . . often had exactly the same time stamp[.] . . . The very large majority of the cases, the orders on the two sides had the same or . . . one millisecond difference in their time stamps.” (Tr. at 1480.) Given the flip speed, market participants did not have enough time to react to Defendant Oystacher’s cancellations.

Mr. May illustrated this point. As a market participant, Citadel suffered from Defendant Oystacher’s flip speeds. Specifically, according to Mr. May,

[t]here are latencies with the CME market updates, meaning that there is a certain minimum amount of time that lapses before we receive another update so multiple actions get bundled together by the time we see the information. In the [spoof events] that I observed, the cancellations were followed by an aggressive order at the same price in the opposite direction *within a few milliseconds, which was less than the time it took us (and all other participants), to send an order in response to the cancellations, and have that order show up in the market data. . . .* The spoofing activity appeared designed to trick us since *the cancellation and subsequent trade occurred without any intervening market updates, which meant that our algorithms could not react* once we realized that the build-up of orders did not reflect genuine interest to trade. . . . [W]hile we always want to trade on orders we put in the market, we cannot do so profitably when the order book does not reflect genuine interest.

(R. 20-5, May Afdvt. at ¶¶ 19, 32, emphasis added); *see also* (Tr. at 56) (“[T]he message to [flip] trade would have already been sent by [the] time we saw the size cancelled. So, even if we [reacted], we were still going to be behind whatever message to [flip] trade had been sent. . . . So by the time I see the [cancellation and flip], even if I see it, the action happened hundreds of microseconds ago.”) As a result, Mr. May used flip speeds as a limiting criteria to develop the

“Pull-Swipe Detector,” described in detail above, that his team used to collect the data underlying their complaint. (*Id.* at ¶ 21.)

2. Defendants’ Self-Implemented Restrictions Effectively Address Defendant Oystacher’s Trading Speed

Defendants’ self-imposed trading-speed limitations effectively hinder Defendant Oystacher’s ability to successfully “switch,” removing his ability to capitalize on the charged scheme’s economic benefit. Specifically, the “Delayed Replace for Cancel/Replace Tool” implements a “speed bump,” delaying Defendant Oystacher’s wash blocker functionality. When Defendant Oystacher enters orders at the same price or better compared to his own opposite-side resting orders, triggering his wash blocker, this compliance tool imposes a one-second delay between the time the wash blocker cancels the resting orders and the time the wash blocker recognizes and administers any of the new orders. In addition, the “Reduce Prior to Cancel/Replace Tool” reduces the amount of orders the wash blocker will cancel at one time. Put differently, when it is triggered, the wash blocker cancels a portion of the opposite resting orders, waits until the market registers this cancellation, and then cancels the remaining resting orders, preventing Defendant Oystacher’s newly placed orders from executing with his own resting orders. Overall, Defendant Oystacher’s trade speed restrictions increase the time between his cancellation and replacement order entries and the overall time it takes to cancel orders in general. In other words, they delay Defendant Oystacher’s “flip speed.”

The CFTC’s implication that a one second delay is too short is unavailing based on the evidence presented during the hearing. Specifically, the CFTC argues that “[t]he one second delay only serves to potentially protect the sub-set of traders who can ingest, process, and react to information in less than a second from being taken advantage of[.]” (R. 175-1 at 38.) The evidence illustrates that one second is sufficient for other market participants to react to

Defendant Oystacher's cancellations before executing with Defendant Oystacher's opposite-side order entries. Indeed, Professor Bessembinder "would say there's no question that an algorithm can process information and . . . react to it and cancel within a second." (Tr. at 1667.) Notably, according to Professor Bessembinder, "[t]he literature has documented that a substantial proportion (in many cases the majority) of order and trading activity in modern electronic financial markets is attributable to 'algorithmic traders[.]'" (R. 20-4, CFTC Exh. 94, at 7.)

Indeed, according to Professor Fischel, "futures markets are among the most active and rapidly changing markets in the world, where there's constant amounts of new information appearing at speeds that some of us who are not traders in this market, frankly, have a hard time appreciating because we typically don't make decisions that quickly." (Tr. at 2131–32.) Mr. May, from Citadel, corroborated this point. According to Mr. May, market participants in the ES Market in 2013 could react within "less than a couple milliseconds" after the market's engine distributed market data. (*Id.* at 183.) Moreover, by 2015, Mr. May asserted that market participants were able to react to market data within three hundred and fifty "microseconds," or millionths of a second. (*Id.* at 184.) In addition, according to a study focused on "Anticipatory Traders and Trading Speeds" conducted, in part, by CFTC employees, both manual and algorithmic traders were able to react within five hundred milliseconds. (Def. Exh. D55, Raymond P. H. Fische, Richard Haynes, & Esen Onur, *Anticipatory Traders and Trading Speed*, Mar. 26, 2015, at 28) ("In fact, these data reveal that 32 manual traders have *average cancellation speeds less than one second*, with eleven of these *less than one-half a second*. . . . Certainly there are more algorithmic traders *with these speeds* as the comparable counts are 130 and 268, respectively.") (emphasis added.) Finally, as noted earlier, Mr. O'Connor referred to one second as an "eternity" in the futures markets. (Tr. at 2066.) Thus, by adding a one second delay between

Defendant Oystacher's cancellations and opposite-side order entries, market participants will have time to react to Defendant Oystacher's cancellations and avoid executing with his opposite-side orders. In other words, this tool helps to prevent the "switch."

Alternatively, the CFTC argues that the "Delayed Replace for Cancel/Replace Tool" "applies only when the cancel/replace functionality is activated, which provides an opportunity for a demonstrably adaptable professional trader like [Defendant] Oystacher to devise an alternate method for carrying out the second leg of his deceptive scheme." (R. 175-1 at 38.) This argument is essentially a "mere possibility" of a future violation that only "serves to keep the case alive." *Di Mucci*, 879 F.2d at 1498 (quoting *W. T. Grant. Co.*, 345 U.S. at 633). The CFTC's case revolves, in part, around Defendant Oystacher's reliance on the wash blocker's cancel/replace functionality. Indeed, both the CEA and Regulation 180.1 charges focus on Defendant Oystacher's use of this tool. Thus, any serious self-implemented corrective measure *should* focus on Defendant Oystacher's use of the wash blocker, rather than raise suspicion when it does.

Finally, the CFTC argues that the speed bump "does not cure the unlawful spoofing and manipulation resulting from fake orders being entered in the market in the first place." (R. 175-1 at 38.) The CFTC's argument, however, is misapplied. The entered fake orders pertain to the "bait," or the initial market participant manipulation needed to engage in a successful spoofing scheme. As explained above, the "Dynamic Max Order Quantity at Price Tool" addresses this leg of the charged scheme. The "Delayed Replace for Cancel/Replace Tool," on the other hand, addresses the "switch," or the virtually simultaneous flip orders that made such "baiting" fruitful. The two tools must be viewed in the aggregate because they function together to address the "bait and switch."

In sum, despite Defendants' past improper trading activities, Defendants' self-implemented compliance tools, along with the Court's limitations set forth below, restrict their ability to engage in spoofing activities, especially for the short duration until trial.⁹ Significantly, Defendant Oystacher is currently only trading on two exchanges and is limited to trading on only those exchanges until after the trial. Given these factors, a preliminary injunction is inappropriate at this time, and the Court denies the CFTC's motion.¹⁰ In order to ensure that Defendants maintain all of the tools that are the basis of the Court's ruling, however, the Court orders the following:

1. Between the date of this Opinion and the conclusion of the trial, Defendants must maintain all of these trading surveillance reports and compliance tools: 1) "Execution vs. Inside Market 50 Percent Report," 2) the "Execution vs. Inside 90 Percent Report," 3) the "Order Bias Report," 4) the "Max Order Size Functionality," 5) the "Large Order Splitter Tool," 6) the "Reduce Prior to Cancel/Replace Tool," 7) the Max Quantity at Price Tool," 8) the "Dynamic Max Quantity at Price Tool," and 9) the "Delayed Replace for Cancel/Replace Tool." The trading surveillance reports and compliance tools must be in effect at all times. If Defendants seek to add any new tools, they must first seek the Court's permission.
2. Mr. O'Connor, 3Red's Chief Compliance Officer, must continue to monitor Defendant Oystacher's compliance with the trading restrictions and ensure that these restrictions remain in effect.
3. Defendant Oystacher's trading is limited to these two markets in which he currently trades: the CME's 1) E-Mini Standard & Poor's 500 Stock Price Index Futures Contracts market (the "ES market") and 2) Ten Year T-Note Treasury Futures market (the "ZN market"). He may not trade in any other futures markets without the Court's permission.
4. Mr. O'Connor must file a sworn affidavit with the Court on the first of every month between the date of this Opinion and the conclusion of the trial affirming that all of these trading restrictions and compliance tools remain in place and that neither Defendant

⁹ The Court is also mindful that many of the charged trades are from 2011-2013, and that the CFTC waited some time to bring this motion.

¹⁰ The Court is aware that Defendants only recently implemented the relevant compliance tools in February 2016. "In the event that in the future plaintiff deems it necessary to seek an injunction on the basis of what appear to be renewed violations by . . . [D]efendant, this Court is not without power to re-open this case and to consider the entire record herein, insofar as any practice of [D]efendant is identical or akin to that which is the subject matter of this suit." *Mitchell v. Stewart Bros. Constr. Co.*, 184 F. Supp. 886, 902 (D. Neb. 1960) (citing *Mitchell v. Vagabond Coach Mfg. Co.*, 234 F.2d 261, 262 (6th Cir. 1956)).

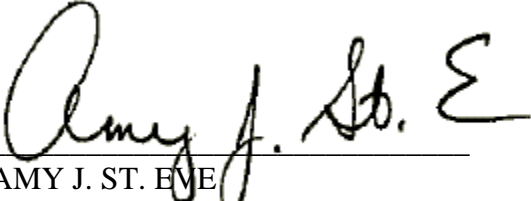
Oystacher nor 3Red have violated any of them. A violation or modification could result in the Court revisiting its denial of the preliminary injunction.

CONCLUSION

For the foregoing reasons, the Court denies the CFTC's motion for a preliminary injunction.

DATED: July 12, 2016

ENTERED



AMY J. ST. EVE
United States District Court Judge