NYSE ARCA, INC.

NYSE REGULATION, Complainant, v. LIME BROKERAGE LLC, Respondent.	Proceeding No. 2016-01-06-00002 February 15, 2019

Lime Brokerage LLC violated: (i) SEC Rules 15c3-5(b) and 15c3-5(c)(l)(i), NYSE Arca Equities Rule 6.18, and NYSE Arca Rule 11.18, by failing to have adequate risk management controls and supervisory procedures reasonably designed to systematically limit its financial exposure and prevent the entry of orders that exceeded appropriate, pre-set credit thresholds; (ii) SEC Rules 15c3-5(b) and 15c3-5(c)(1)(ii), NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18, by failing to have adequate risk management controls and supervisory procedures reasonably designed to prevent the entry of erroneous orders; (iii) NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18, by failing to monitor client trading to ensure compliance with all regulatory requirements; and (iv) SEC Rule 15c3-5(b), NYSE Arca Equities Rule 6.18, and NYSE Arca Rule 11.18, by failing to establish, maintain, and preserve an adequate written description of its risk management controls and supervisory procedures. Consent to censure and $210,000 fine.

Appearances

For the Complainant: Aaron H. Krieger, Esq., Daniel J. Northrop, Esq., and Adam J. Wasserman, Esq., NYSE Regulation.

For the Respondent: James L. Kopecky, Esq., Kopecky Schumacher Rosenburg LLC.

DECISION

Lime Brokerage LLC (“Lime” or “Firm”) and NYSE Arca, Inc. (“NYSE Arca”) entered into an Offer of Settlement and Consent for the sole purpose of settling this disciplinary proceeding, without adjudication of any issues of law or fact, and without admitting or denying any

allegations or findings referred to in the offer of settlement.[1] The Hearing Officer accepts the Offer of Settlement and Consent and issues this Decision in accordance with NYSE Arca Rules.[2]

FINDINGS OF FACTS AND VIOLATIONS

Background and Jurisdiction

1. At all relevant times Lime was an agency-only broker-dealer that provided technology and direct market access to the Firm's customers. Lime has been a registered member of NYSE Arca, Inc. since March 22, 2002.

Overview

2. Between November 2013 and May 2018 ("Relevant Period"), Lime failed to establish, document, and maintain a system of risk management controls and supervisory procedures, including written supervisory procedures ("WSPs") and an adequate system of follow up and review of customer activity reasonably designed to manage the financial, regulatory, and other risks of its market access business, in violation of Rule 15c3-5 under the Securities Exchange Act of 1934 ("Rule 15c3-5")[3] and the supervisory rules of NYSE Arca, Inc.

3. Lime failed to reasonably supervise its business and customers in several respects, including:

    a. Failing to establish reasonably designed pre-set credit limits, resulting in¸ *inter alia*, the Firm extending billions of dollars of unapproved credit exposure to clients and, thereafter, failing to correct the issue after it was identified, creating billions of dollars of unwarranted financial exposure to clients, other market participants, the Firm, and the markets at large.

    b. Failing to establish a reasonably designed supervisory system for implementing appropriate pre-trade controls leading to, *inter alia*, the *ad hoc* application of controls by personnel not authorized to make compliance or risk determinations, resulting in arbitrary, unapproved trading parameters, and a number of clients being excepted from certain controls altogether.

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[1] FINRA's Office of Hearing Officers reviewed the Offer of Settlement and Consent under the terms of a Regulatory Services Agreement (as amended) among NYSE Group, Inc., New York Stock Exchange LLC, NYSE Arca, Inc., NYSE American LLC (f.k.a. NYSE MKT LLC), and FINRA.

[2] The facts, allegations, and conclusions contained in this Decision were taken from the executed Offer of Settlement and Consent.

[3] The SEC adopted Rule 15c3-5 effective January 14, 2011. *See* 17 C.F.R. § 240.15c3-5, *Risk Management Controls for Brokers or Dealers with Market Access*, 75 Fed, Reg. 69792 (Nov. 15, 2010) (Final Rule Release).

c. Failing to adequately monitor customer trading activity for potentially manipulative activity by, *inter alia*, failing for years to reasonably review and follow up on tens of thousands of exception alerts and take steps to correct recidivist problematic client conduct, despite the clients repeatedly providing incomplete or inadequate information to the Firm concerning their conduct.

4. Indeed, although Lime management—including senior personnel in Lime's compliance department, and business, sales, and technology groups—was made aware of many of these issues, the Firm failed to address several of them.[4]

5. By failing to establish adequate controls and procedures concerning pre-set credit thresholds and pre-trade erroneous order controls, and failing to properly monitor and supervise the activities of its customers, Lime violated Rules 15c3-5(b), (c)(1)(i), and (c)(1)(ii), and NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18.[5]

Violations

6. During the Relevant Period, Rule 15c3-5(b) required market access broker-dealers to establish, document, and maintain a system of risk management controls and supervisory procedures reasonably designed to manage the financial, regulatory, and other risks of their market access business.

7. During the Relevant Period, Rule 15c3-5(c)(1)(i) required market access broker-dealers to have financial risk management controls and supervisory procedures reasonably designed to prevent the entry of orders that exceed appropriate pre-set credit or capital thresholds in the aggregate for each client and the broker-dealer.

8. During the Relevant Period, Rule 15c3-5(c)(l)(ii) required market access broker-dealers to have financial risk management controls and supervisory procedures reasonably designed to prevent the entry of erroneous orders, by rejecting orders that exceed appropriate price or size parameters, on an order-by order basis or over a short period of time, or that indicate duplicative orders.

9. During the Relevant Period, Rule 15c3-5(c)(2) required market access broker-dealers to have regulatory risk management controls and supervisory procedures reasonably designed to ensure compliance with all regulatory requirements.

[4] In May 2018 Lime acquired certain assets of another broker-dealer; in connection with that acquisition, members of that broker-dealer's management group were installed as Lime's new Chief Executive Officer, co-Presidents, and Chief Compliance Officer, among other personnel changes. The Relevant Period described herein predates the implementation of Lime's new management.

[5] On August 17, 2017, NYSE Equities Rule 6.18 became NYSE Arca Rule 11.18. This Decision cites both rules because the Relevant Period is November 2013 through May 2018.

10. Rule 15c3-5 required, among other things, that a broker-dealer with market access document its system of risk management controls and supervisory procedures designed to manage the financial, regulatory, and other risks of market access. The broker-dealer must preserve a copy of its supervisory procedures and "a written description of its risk management controls" as part of its books and records for the time period required by SEC Rule 17a-4(e)(7). The required written description is intended, among other things, to assist Commission and SRO staff to assess the broker-dealer's compliance with the rule.[6]

11. At all relevant times, NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18 required, among other things, that every member establish, maintain, and enforce written procedures reasonably designed to achieve compliance with applicable federal securities laws and regulations, and with NYSE Arca Rules, to supervise the business in which it engages and the activities of its associated persons.

Failure to Prevent the Entry of Orders Exceeding Reasonably Designed Pre-Set Credit Thresholds

12. During the course of the investigation, NYSE Regulation Staff identified several deficiencies with respect to Lime's application of client credit limits during the Relevant Period. These deficiencies included failing to: (a) decrement credit limits across trading servers; (b) implement appropriate credit limits after identifying the decrementing error; and (c) establish and maintain reasonable WSPs and processes for implementing credit limits.

Failure to decrement credit limits across trading servers

13. Lime applied certain of its risk management controls, including credit limits, through trading clusters—pairings of trading servers—through which clients were configured to trade. Lime had multiple clusters available to clients and a number of clients were configured to trade through multiple clusters.

14. Until mid-2014, Lime's trading clusters applied credit limits independently and did not account for the fact that many clients traded through multiple clusters. Instead, the Firm allocated the full amount of approved credit for each client on each cluster on which it was configured. As a result, Lime provided clients trading on multiple clusters substantially more credit risk exposure than it had intended and approved.

15. For example, Client A was approved to have an approximately $500 million credit limit. However, because Client A was configured to trade on four clusters, Client A was inadvertently allowed a credit limit of approximately $2 billion. Similarly, Client B was

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[6] 75 Fed. Reg. at 69812.

inadvertently allowed a credit limit of approximately $500 million despite being approved for a credit limit of approximately $125 million.

16. Lime identified this configuration gap in or around January 2014. Lime staff raised this issue to senior people in compliance and business groups with one individual describing the error as an "urgent problem." A senior employee stated that continuing to permit these credit limits was "very risky." However, the Firm did not begin to roll out updated configurations that enabled the trading clusters to calculate credit limits collectively until approximately six months later.

17. As a result of the failure to reasonably supervise the implementation of its pre-set credit thresholds and monitor the thresholds thereafter, Lime enabled its clients to take on billions of dollars of unsupported risk for which they were not vetted, posing risks to the clients, Lime, and other market participants.

Failure to correct credit limits after discovering configuration error

18. Even after identifying the decrementing issue, Lime failed to reduce credit limits on certain clients despite concerns of Firm staff, including in the compliance department, after clients resisted the changes.

19. Firm management, including compliance, agreed that Lime needed to reduce exposure limits to approved numbers and that it should happen "promptly."

20. However, notwithstanding the concerns raised by Lime personnel, the Firm failed to implement these changes for a number of clients. For example, Lime never reduced Client A's credit limits to the approved threshold during the Relevant Period.

21. Describing the process of addressing the decrementing issues, one compliance analyst wrote to the then-chief compliance officer that "[t]he dynamics here are all wrong and very troublesome," suggesting that business and other groups were choosing not to involve compliance in these critical issues. The chief compliance officer agreed with the analyst but could not recall if any changes were made in connection with this incident.

Failure to establish reasonable written supervisory procedures and processes for implementing credit limits

22. During most of the Relevant Period, Lime's Risk Committee was charged with the primary responsibility for setting credit limits. The Risk Committee was supposed to consider a number of factors in approving credit limits, including how market shifts could affect the client, as well as considerations set forth by the SEC, such as a customer's

business, financial condition, and trading patterns, among others.[7] Prior to the Risk Committee's reviews, similar reviews were supposed to be done by the director of operations or others.

23. However, Lime failed to substantiate that it followed its own WSPs and guidelines with respect to considering factors for setting credit limits set forth both by the Firm and the SEC, or that it documented its processes for considering Rule 15c3-5 controls.

24. In part as a result of these procedural failures, Lime enabled clients to trade with approved credit limits that sometimes equaled 70 times the client's cash equity. Lime approved Client A, for example, for a $500 million credit limit (which rose to approximately $2 billion due to the decrementing error) despite that client having only approximately $8 million in cash equity.

25. The aforementioned conduct constituted violations of Rules 15c3-5(b), 15c3-5(c)(l)(i), NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18.

Failure to Establish, Maintain, and Enforce Controls Reasonably Designed to Prevent the Entry of Erroneous Orders

26. During the course of the investigation, NYSE Regulation Staff identified several deficiencies with respect to Lime's implementation of pre-trade controls to prevent erroneous orders. Specifically, the deficiencies concerned the Firm's rate limit controls, duplicative order controls, and boundary price checks.

Rate Limit Controls

27. Lime's rate limits and burst rates controlled how many new or cancel-and-replace orders an account could submit to the market per second, and were applied on an account-by-account basis. Such limits were important because transmission of abnormally high rates of messages could be an indicator of potential errors, system malfunctions, or improper conduct, resulting in market harm, creating conditions that do not fairly reflect prices of securities or system issues by creating latencies in transmitting orders.

28. As with Lime's credit limits, the Risk Committee or other designated personnel were charged with approving rate limits based on consideration of "many data points." However, the evidence did not substantiate the process for setting the rate limits, the factors to be considered, or the bases for the default rates set by the Firm.

29. Moreover, the effectiveness of Lime's rate limits was hindered because the Firm did not include cancelled orders as messages in the rate count. That omission permitted certain

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[7] *See* Response 8, Responses to Frequently Asked Questions Concerning Risk Management Controls for Brokers or Dealers with Market Access, U.S. Securities and Exchange Commission (Apr. 15, 2014), *available at* https://www.sec.gov/divisions/marketreg/faq-15c-5-risk-management-controls-bd.htm.

clients to send large numbers of cancellation orders through Lime's infrastructure (and to the market) over short periods of time. In multiple instances the transmission of such high rates of orders by specific clients caused outages, latencies, and other issues in Lime's trading infrastructure that impacted order flow by other Lime clients.

30. Lime had the capacity to modify this control to address such issues; indeed, Lime knew that one way to avoid a client shutting "down any route at any time by sending a cancel flood" was to implement a rate limit for or including cancel messages, but Lime failed to take corrective action, exposing its clients to the risks of the latencies and outages described above.

Pre-Trade Duplicative Order Controls

31. Beginning in or around the end of 2013, Lime began utilizing a post-trade Duplicative Order Report to identify potentially duplicative orders for review. However, the report did not adequately comply with Rule 15c3-5(c)(1)(ii), which required the prevention of orders appearing to be duplicative.

32. Lime did not have any pre-trade duplicative order controls to prevent such orders.

33. Lime had the capability to implement a pre-trade block on potentially duplicative orders, but did not do so. The Firm knew that as a result of this approach, it was permitting potentially duplicative orders to enter the market.

Pre-Trade Boundary Price Checks

34. During the Relevant Period, Lime implemented boundary (or price) checks to prevent clients from entering orders that were outside a particular range from a security's reference price. This control was a primary safeguard against potentially erroneously priced orders.

35. Lime's boundary price checks were not reasonably designed for a number of reasons, including, but not limited to the following:

    a. With regard to Lime's boundary price checks during core trading hours from 2012 to mid-2014, the Firm set its controls only to notify it of the entry of an order outside the set bands, not to actually reject or block any orders.

    b. Lime had no boundary price checks (or notifications) for non-core trading hours until December 2014.

    c. Lime's boundary price checks were not configured in accordance with the Firm's own procedures; rather, the Firm implemented checks at parameters more lenient than management previously approved and, in some instances, not configured for certain clients at all. Lime personnel made these configuration decisions without consulting

with the Firm's compliance department or the Risk Committee (or other oversight groups).

36. The aforementioned conduct constituted violations of Rules 15c3-5(b), 15c3-5(c)(l)(ii), NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18.

Failure to Monitor for Potential Manipulative Activity

37. Lime was responsible for establishing, implementing, and maintaining adequate risk management controls and supervisory procedures, including WSPs, and a system of follow-up and review reasonably designed to: (i) investigate red flags and monitor the trading activity of its customers; (ii) detect and prevent suspicious and potentially manipulative trades; and (iii) ensure that all trades entered under the Firm's market participant identifiers complied with applicable federal securities laws and regulations and the rules of NYSE Arca.[8]

38. Lime failed to have reasonable controls and procedures to adequately provide for the monitoring, reviewing, and follow-up concerning potentially improper trading activity by the Firm's clients with respect to indicia of potential erroneous or manipulative activity, including abnormally high rates of messaging, manipulation of markets leading up to and in the close, and pre-arranged trading, such as wash trades.

39. Lime acknowledged that its WSPs lacked detailed descriptions of the various supervisory systems it purportedly undertook in monitoring client activity. This was, in part, because the Firm relied on the discretion of its employees in lieu of written procedures.

40. This *ad hoc* approach resulted in repeated failures to adequately review and follow up on potentially manipulative trading conduct by clients.

41. For example, between October 2014 and December 2017, one client triggered Lime's surveillances over 50,000 times. More than 400 of those alerts concerned marking the close or open, while more than 13,000 concerned possible spoofing or layering. Nonetheless, Lime appeared to have reached out to the client in only a small number of instances regarding this potentially violative trading. Even in those rare instances, the Firm accepted at face value general responses and descriptions by the client with little to no internal consideration of the issues.

42. When Lime staff identified a potential issue with a client's activity, it regularly failed to take any corrective actions, instead submitting to client pressure to not make changes or relying on the client to implement controls that Lime had the capability to do itself.

43. For example, Lime reached out to one client at least as early as 2012 about taking corrective action to address malfunctions by the client's algorithm. The client repeatedly

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[8] *See, e.g.,* NYSE Arca Rule 11.18(b).

insisted it would correct the issue and that Lime should not implement more restrictive limits on its trading. Lime acceded to the client's requests. In at least 10 instances over the next four years, Lime reached out to the same client concerning similar trading issues. The client repeatedly insisted it had taken or would take corrective action. Lime repeatedly took the client's response at face value and took no further action.

44. As recently as May 2016, Lime staff asked the client whether "[g]iven the recidivism – specifically the fact that [compliance staff] have contacted you about this [conduct and controls] previously – is there a way that you are able to ensure that all new code changes" would address the relevant issues.

45. During the same period, Lime's compliance staff expressed concern about the client's activity and in particular about "just how many strategies a small number of people can operate and maintain control over – that's our bigger concern," and that the client's algorithm was possibly operating "without human monitoring or interaction." Notwithstanding the above, Lime took no further action to address its concerns or the client's trading.

46. The aforementioned supervisory failures constitute violations of NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18.

Relevant Disciplinary History

47. On October 13, 2016, Lime settled a matter concerning its failure to establish a reasonable risk management system and WSPs to oversee market access clients and surveil for potentially manipulative trading. Lime paid a $90,000 total fine to multiple exchanges (including NYSE American (formerly known as NYSE MKT)) to settle the matter.

48. On January 1, 2015, Lime settled a matter with three non-NYSE exchanges concerning inadequate supervision of market access clients specific to marking the close activity. Further, the WSPs did not identify the person responsible for monitoring compliance with appropriate rules, or follow-up steps to be taken concerning such activity. Lime paid a $130,000 total fine to resolve the matter.

ORDER

Lime Brokerage LLC violated: (i) SEC Rules 15c3-5(b) and 15c3-5(c)(l)(i), NYSE Arca Equities Rule 6.18, and NYSE Arca Rule 11.18, by failing to have adequate risk management controls and supervisory procedures reasonably designed to systematically limit its financial exposure and prevent the entry of orders that exceeded appropriate, pre-set credit thresholds; (ii) SEC Rules 15c3-5(b) and 15c3-5(c)(1)(ii), NYSE Arca Equities Rule 6.18 and NYSE Arca Rule 11.18, by failing to have adequate risk management controls and supervisory procedures reasonably designed to prevent the entry of erroneous orders by rejecting orders that exceed appropriate price or size parameters, or that indicate duplicative orders; (iii) NYSE Arca Equities

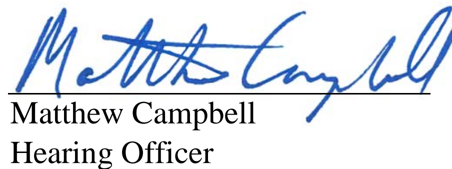
Rule 6.18 and NYSE Arca Rule 11.18, by failing to monitor client trading to ensure compliance with all regulatory requirements, including to detect and prevent potentially violative manipulative and wash trading; and (iv) Rule 15c3-5(b), NYSE Arca Equities Rule 6.18, and NYSE Arca Rule 11.18, by failing to establish, maintain, and preserve an adequate written description of its risk management controls and supervisory procedures.

SANCTIONS

Lime Brokerage LLC is censured and fined $210,000.[9]

Lime shall undertake, within 90 days of the date of this decision, to remediate the issues described herein with respect to the establishment and implementation of credit limits, pre-trade controls and related supervisory deficiencies, and to establish a reasonable system of customer supervision and follow-up.

These sanctions are effective immediately.



Matthew Campbell
Hearing Officer

[9] Pursuant to separate settlement agreements, Lime agreed to a total fine of $625,000, of which $210,000 shall be paid to NYSE Arca Inc., and the remaining amount to New York Stock Exchange LLC and NYSE American LLC.