SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-79608; File No. SR-CHX-2016-16)  

December 20, 2016  

Self-Regulatory Organizations; Chicago Stock Exchange, Inc.; Order Instituting Proceedings to Determine Whether to Approve or Disapprove a Proposed Rule Change to Adopt the CHX Liquidity Taking Access Delay  

I. Introduction  

On September 6, 2016, the Chicago Stock Exchange, Inc. (“CHX” or “Exchange”) filed with the Securities and Exchange Commission (“Commission”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Exchange Act”)\(^1\) and Rule 19b-4 thereunder,\(^2\) a proposed rule change to adopt the CHX Liquidity Taking Access Delay (“LTAD”). The proposed rule change was published for comment in the Federal Register on September 22, 2016.\(^3\) On November 1, 2016, pursuant to Section 19(b)(2) of the Exchange Act,\(^4\) the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to disapprove the proposed rule change.\(^5\) The Commission received 20 comments on the proposed rule change, including a response to certain comment letters by the Exchange.\(^6\) This order institutes proceedings under  

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\(^5\) See Securities Exchange Act Release No. 79216, 81 FR 78228 (November 7, 2016). The Commission designated December 21, 2016, as the date by which the Commission shall either approve or disapprove, or institute proceedings to determine whether to disapprove, the proposed rule change.  
Section 19(b)(2)(B) of the Exchange Act\textsuperscript{7} to determine whether to approve or disapprove the proposed rule change.

II. Summary of the Proposal

A. Description

The LTAD would require all new incoming orders received during the Open Trading State that could immediately execute against one or more resting orders on the CHX book, as well as certain related cancel messages, to be intentionally delayed for 350 microseconds before such delayed messages would be processed by the Matching System. All other messages, including liquidity providing orders (i.e., orders that would not immediately execute against resting orders) and cancel messages for resting orders, would be immediately processed without delay.

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8 “New incoming orders” are orders received by the Matching System for the first time. The LTAD would not apply to other situations where existing orders or portions thereof are treated as incoming orders, such as (1) resting orders that are price slid into a new price point pursuant to the CHX Only Price Sliding or Limit Up-Limit Down Price Sliding Processes and (2) unexecuted remainders of routed orders released into the Matching System. See Notice, supra note 3, 81 FR at 65443, n.5.

9 “Open Trading State” means the period of time during the regular trading session when orders are eligible for automatic execution. See CHX Article 1, Rule 1(qq).

10 “Processed” means executing instructions contained in a message, including, but not limited to, permitting an order to execute within the Matching System pursuant to the terms of the order or cancelling an existing order. See Notice, supra note 3, 81 FR at 65443, n.7.

11 “Matching System” means the automated order execution system, which is part of CHX’s “Trading Facilities” as defined under CHX Article 1, Rule 1(z). See id. at 65443, n.8.
Each delayable message would be diverted into the LTAD queue and would remain delayed until it is released for processing. A delayed message would become releasable 350 microseconds after initial receipt by the Exchange (“Fixed LTAD Period”), and would be processed only after the Matching System has evaluated and processed, if applicable, all messages in the security received by the Exchange during the Fixed LTAD Period for the delayed message.12 A message may be delayed for longer than the Fixed LTAD Period depending on the then-current messaging volume in the security, according to the Exchange.13

B. Purpose of the LTAD

The Exchange states that it designed and proposed the LTAD to respond to declines in CHX volume and size at the national best bid or offer (“NBBO”) in the SPDR S&P 500 trust exchange-traded fund (“SPY”) between January 2016 and July 2016, which it attributes to latency arbitrage activity in SPY.14 CHX defines “latency arbitrage” as the practice of exploiting disparities in the price of a security or related securities that are being traded in different markets by taking advantage of the time it takes to access and respond to market information.15
The Exchange asserts that much of the CHX liquidity in SPY and other S&P 500-correlated securities is provided as part of an arbitrage strategy between CHX and the futures markets, whereby liquidity providers utilize, among other things, proprietary algorithms to price and size resting orders on CHX to track index market data from a derivatives market (e.g., E-Mini S&P traded on the Chicago Mercantile Exchange’s Globex trading platform). According to the Exchange, prior to the beginning of the SPY latency arbitrage activity, which CHX first observed in January of 2016, CHX volume and liquidity in SPY constituted a material portion of overall volume and liquidity in SPY market-wide. Specifically, CHX states that: (1) its market share in SPY as a percentage of total volume decreased from 5.73% in January 2016 to 0.57% in July 2016, while certain control securities (“Control Securities”) did not experience similar declines; and (2) the time-weighted average CHX size at the NBBO in SPY relative to the total NMS size at the NBBO in SPY decreased from 44.36% in January 2016 to 3.39% of the total NMS size at the NBBO in SPY in July 2016, while the Control Securities did not experience similar declines.

16 See id. at 65443, n.10.

17 CHX states that it designated DIA, IWM, and QQQ as Control Securities because they share the following similarities to SPY: (1) highly correlated in price movements with a well-known equity market index; (2) ETFs; (3) traded in CHX’s Chicago data center; (4) actively traded in the NMS; and (5) highly correlated with a futures contract traded electronically on the Globex trading platform. See id. at 65448, n.59 and accompanying text.

18 See id. at 65443, n.11.
The Exchange asserts that the LTAD would enhance displayed liquidity and price discovery in NMS securities without adversely affecting the ability of virtually all market participants, other than latency arbitrageurs, to access liquidity at CHX.\(^\text{19}\) In support of this conclusion, CHX offers an analysis of cancel activity in SPY at CHX for the period starting in May 2016 through July 2016, and asserts that, if the LTAD had been implemented during that time period, out of a total of 18,316 at least partially-executed orders in SPY, only 20 liquidity taking orders not attributed to latency arbitrage activity would have not been executed.\(^\text{20}\)

III. Summary of Comments

Commenters both supportive of and opposing the proposed rule change have opined on a number of aspects of the proposed rule change and whether the proposal is consistent with the requirements of the Exchange Act and the rules thereunder.

Some commenters question whether latency arbitrage as asserted by CHX is to blame for the decline in CHX’s market share and whether the LTAD would solve the purported problem.\(^\text{21}\) Other commenters assert that the proposed rule change is overbroad because the proposed LTAD is a systemic solution to a problem – namely a decline in CHX’s market share in one security – that CHX has not demonstrated to be market-wide.\(^\text{22}\) One commenter states that based on CHX’s assertion that latency arbitrage is a market-wide issue caused by a structural bias, the Commission should not address the issue in isolation, but should instead consider a market-wide solution.\(^\text{23}\)

\(^{19}\) See id. at 65456.

\(^{20}\) See id. at 65444, n.19.

\(^{21}\) See Hudson River Trading Letter, supra note 6, at 2; HMA Letter, supra note 6, at 5.

\(^{22}\) See Citadel Letter, supra note 6, at 11; HMA Letter, supra note 6, at 4.

\(^{23}\) See SIFMA Letter, supra note 6, at 5.
One commenter asserts that the LTAD might enable latency arbitrage among correlated instruments by applying its speed bump to some but not all related securities.\textsuperscript{24} Another commenter states that applying the LTAD on a security-by-security basis would add unnecessary market complexity and give CHX unreasonable flexibility while requiring market participants to develop symbol specific routing strategies to meet their obligations under Rule 611 of Regulation NMS.\textsuperscript{25}

\textsuperscript{24} See Leuchtkaf'er Letter 1, \textit{supra} note 6, at 2; Leuchtkaf'er Letter 2, \textit{supra} note 6, at 5.

\textsuperscript{25} See SIFMA Letter, \textit{supra} note 6, at 4.
One commenter asserts that what CHX describes as latency arbitrage could be another firm or firms engaging in a similar arbitrage strategy between CHX and the futures markets that are faster and/or more skilled than CHX’s liquidity providers.\textsuperscript{26} CHX responds by insisting that utilization of algorithms by liquidity providers to price and size resting orders on CHX to track index market data from a derivatives market is different than latency arbitrage and provides additional data that it asserts supports that conclusion.\textsuperscript{27} Another commenter questions whether CHX could address what it perceives as latency arbitrage by improving its technology to reduce the time to cancel for liquidity providers.\textsuperscript{28}

A number of commenters assert that the proposed LTAD would increase displayed liquidity.\textsuperscript{29} One commenter, however, asserts that, while the LTAD would enhance displayed liquidity, the increased liquidity would be more conditional and less accessible.\textsuperscript{30} Another

\begin{itemize}
\item \textsuperscript{26} See Hudson River Trading Letter, supra note 6, at 2.
\item \textsuperscript{27} See CHX Response, supra note 6, at 6. Specifically, CHX submits the following additional data regarding SPY for the period of May through July 2016: (1) latency arbitrage resulted in no liquidity in SPY at CHX as all orders that CHX attributes to latency arbitrage were Immediate Or Cancel orders; and (2) while 77% of the trades that CHX attributes to latency arbitrage were followed by late cancel messages for the provide order soon after the execution, only 2.7% of the trades the CHX does not attribute to latency arbitrage were followed by late cancel messages from the liquidity provider.
\item \textsuperscript{28} See SIFMA Letter, supra note 6, at 4-5.
\item \textsuperscript{29} See, e.g., Virtu Letter, supra note 6, at 2 (the LTAD would improve price discovery in NMS securities on lit, protected exchanges); Potamus Letter, supra note 6, at 1; Beste Bidd Letter, supra note 6 (the proposal would enhance liquidity in the public markets by helping market-makers and long-term investors meet on-exchange); Jacobson Letter, supra note 6, at 2; Volant Letter, supra note 6, at 1; Angel Letter, supra note 6, at 2 (the proposal would incentivize market makers to post more liquidity, which would lead to deeper quotes and tighter bid-ask spreads); Budish Letter, supra note 6, at 2. Another commenter states that the LTAD has the potential to enhance liquidity. See Bats Letter, supra note 6, at 2.
\item \textsuperscript{30} See Hudson River Trading Letter, supra note 6, at 3. Similarly, another commenter states that the proposal has the potential to distort the market view of available liquidity if such liquidity proves to be ephemeral. See Bats Letter, supra note 6, at 2.
\end{itemize}
commenter argues that the Investors Exchange LLC (“IEX”) delay, which the Commission approved, also makes protected quotes less accessible. 31

Commenters also opined on the competitive effect of the LTAD. Some commenters assert that the LTAD would unduly burden competition among CHX’s members and among national securities exchanges. 32 Alternatively, other commenters assert that approval of the proposal would introduce greater competition among the national securities exchanges, and that the Commission should regard the LTAD as an innovation that could allow CHX to better compete with other exchanges. 33 Additionally, another commenter asserts that the LTAD would lower the cost of entry for new liquidity providers because they would not have to invest in technology to be faster than the fastest latency arbitrageur. 34

Commenters disagree about whether the LTAD would be unfairly discriminatory. A number of commenters state that the LTAD would be unfairly discriminatory because it would delay only liquidity taking orders. 35 Another commenter states that the LTAD is unfairly discriminatory because it would provide CHX liquidity providers with a “last look” whereby they could back away from their displayed quotations, and may result so that liquidity takers

31 See Volant Letter, supra note 6, at 2.
32 See Hudson River Trading Letter, supra note 6, at 3; FIA PTG Letter supra note 6, at 4-5; Citadel Letter, supra note 6, at 10-11.
33 See Angel Letter, supra note 6, at 2; CTC Trading Letter, supra note 6, at 4-5; Potamus Letter, supra note 6, at 2.
34 See Volant Letter, supra note 6, at 3.
35 See, e.g., Citadel Letter, supra note 6, at 6-8; Hudson River Trading Letter, supra note 6, at 2-3; FIA PTG Letter, supra note 6, at 3. See also SIFMA Letter, supra note 6, at 3 (asserting that any intentional delay should be universally applied to all market participants in a non-discriminatory manner). Another commenter asserts that intentionally delaying the orders of only some market participants could distort markets and may not be beneficial for long-term investors, and that any intentional delays should be equally applied to all market participants. See Committee on Capital Markets Letter, supra note 6, at 2.
would be unable to reliably access quotations provided by CHX liquidity providers. One commenter asserts that the LTAD would unfairly discriminate in favor of market makers who have the resources to respond to price changes on the futures market ahead of all other market participants.

36 See Citadel Letter, supra note 6, at 6.
37 See Leuchtkaf er Letter 1, supra note 6, at 1; Leuchtkaf er Letter 2, supra note 6, at 3.
Supporters of the proposed rule change assert that, because all liquidity taking orders would be treated the same, the LTAD would not be unfairly discriminatory.\(^{38}\) The Exchange asserts that the LTAD is narrowly tailored to address latency arbitrage by giving liquidity providers a tiny head start to cancel stale quotes in the race to react to symmetric public information, and that it could not effectively address latency arbitrage without distinguishing between liquidity taking and liquidity providing orders.\(^{39}\) One commenter states that the LTAD could benefit any market participant who posts an order to the extent they would otherwise be traded against by another participant with identical information but a slightly faster data feed.\(^{40}\) The commenter argues that the LTAD’s discrimination is necessary to disincentivize a technological arms race that is contrary to investor protection and the public interest.\(^{41}\) Both the commenter and the Exchange assert that the proposed discrimination is fair because it would make the market structure fairer by leveling the playing field, which currently is tilted against liquidity providers.\(^{42}\)

One commenter asserts that the LTAD would damage the efficiency of the market by undermining the ability of exchange-traded fund (“ETF”) market makers’ ability to engage in arbitrage transactions.\(^{43}\) In response, the Exchange states that no evidence has been offered to support the conclusion that the LTAD would negatively impact ETF trading, and that the LTAD

\(^{38}\) See Angel Letter, supra note 6, at 2; CHX Response, supra note 6, at 2.

\(^{39}\) See CHX Response, supra note 6, at 2, 8. See also Budish Letter, supra note 6, at 2.

\(^{40}\) See CTC Trading Letter, supra note 6, at 5.

\(^{41}\) See id. at 2.

\(^{42}\) See id. at 3; CHX Response, supra note 6, at 2. See also IB Letter, supra note 6, at 2.

\(^{43}\) See Citadel Letter, supra note 6, at 12-13. See also Beste Bidd Letter, supra note 6 (stating that ETPs could be severely affected during periods of elevated volatility if market makers are forced to hedge on unreliable markets).
would not have a material impact on liquidity taking orders that are not submitted as part of a latency arbitrage strategy.44

Commenters disagree about whether the LTAD would be consistent with Rule 602 of Regulation NMS (“Quote Rule”). Two commenters assert that adoption of the LTAD may be inconsistent with the Quote Rule.45 Two other commenters state that the LTAD could violate the Quote Rule because it is designed to allow liquidity providers to back away from their quotes.46

Another commenter and the Exchange, however, argue that the LTAD would not violate the Quote Rule. They argue that, under the rule, the duty of a broker or dealer to stand behind its quote would not vest because the LTAD would prevent the liquidity provider from receiving (i.e., being presented with) a marketable contra-side order.47

Commenters also disagree about whether adoption of the LTAD would be consistent with CHX’s protected quotation status under Regulation NMS.48 One commenter asserts that allowing some market participants to have an advantage over others frustrates the purposes of Rule 611 of Regulation NMS by impairing fair and efficient access to an exchange’s quotations.49 Another commenter argues that exchanges with asymmetric access delays should not be considered to have “protected quotations” under Rule 611 of Regulation NMS.50 Other

44 See CHX Response, supra note 6, at 9.
45 See NYSE Letter, supra note 6, at 3 (stating that CHX would not be enforcing its members’ obligations under the Quote Rule); Bats Letter, supra note 6, at 1 (stating that, absent new interpretative guidance, the proposal likely violates the Quote Rule).
46 See FIA PTG Letter, supra note 6, at 4; Citadel Letter, supra note 6, at 5-6.
47 See CTC Trading Letter, supra note 6, at 5-6; CHX Response, supra note 6, at 11-12.
48 17 CFR 242.611.
49 See FIA PTG Letter, supra note 6, at 3.
50 See Beste Bidd Letter, supra note 6. See also SIFMA Letter, supra note 6, at 3 (questioning the implications of market participants’ obligation under Rule 611 of
commenters assert that the LTAD would impair a market participant’s ability to fairly and efficiently access a quote, and therefore it is inconsistent with the goals of Rule 611.  

In response, the Exchange argues that the LTAD is consistent with Rule 611 of Regulation NMS because the Commission does not interpret “immediate” to prohibit implementation of a de minimis intentional access delay, and the delay imposed by the LTAD would not impair fair and efficient access to the Exchange’s quotations because: (1) the LTAD would apply to all liquidity taking orders submitted by any CHX participant and would only delay such orders by 350 microseconds, the same length as the IEX speed bump; (2) the 350-microsecond delay is so short that it would only neutralize a structural bias that permits latency arbitrageurs to profit from symmetric public information; (3) it would not provide an incremental advantage to a liquidity provider other than to neutralize the structural bias to latency arbitrageurs; and (4) the LTAD is narrowly-tailored to address latency arbitrage strategies at CHX.

Certain commenters assert that the LTAD would result in unfair allocation of SIP market data revenue by generating an increase in quoting, but not necessarily trading, on the Exchange. The Exchange responds that the LTAD would not encourage non-bona fide quote

Regulation NMS to access protected CHX quotes when the CHX liquidity providers’ quotes may not be accessible as a result of the LTAD).

See Hudson River Trading Letter, supra note 6, at 4; Citadel Letter, supra note 6, at 12-13; NYSE Letter, supra note 6, at 4. See also SIFMA Letter, supra note 6, at 4 (questioning the effect of an access delay coupled with existing geographic or technological latencies on the fair and efficient access to an exchange’s protected quotations).

See CHX Response, supra note 6, at 14.

See Hudson River Trading Letter, supra note 6, at 5; FIA PTG Letter, supra note 6, at 3; SIFMA Letter, supra note 6, at 4. Another commenter argues that in conjunction with CHX’s market data revenue sharing program, the LTAD would harm overall market transparency, quality, and efficiency. See Citadel Letter, supra note 6, at 3-4.
activity for the purpose of earning rebates because quotes cancelled within the 350-microsecond LTAD would not be eligible for market data revenue rebates, and cancellation of such quotes could result in the CHX participant being assessed an order cancellation fee.\textsuperscript{54}

One commenter asserts that the LTAD may encourage spoofing by decreasing the risk of executions.\textsuperscript{55} Another commenter states that the LTAD would facilitate market manipulation by allowing liquidity providers a means for setting the NBBO with a quotation that they do not intend to honor.\textsuperscript{56} In response, the Exchange states that the LTAD would be too short to introduce any incremental risk of manipulative practices, and that the Exchange has in place surveillances to detect, and rules to deter, these practices.\textsuperscript{57}

Two commenters assert that the LTAD would confer special benefits on market participants without imposing any new obligation or responsibility to contribute to market quality.\textsuperscript{58} One commenter suggests that the LTAD could be more narrowly tailored to apply only to orders that would take liquidity from market makers that meet heightened quoting obligations.\textsuperscript{59}

Finally, a commenter asserts that due to the implementation of the LTAD through software, rather than hardware, the indeterminacy of the delay may result in the LTAD producing delays inconsistent with the Commission’s “speed bump guidelines.”\textsuperscript{60} In response, the Exchange states that system messaging delays and variable message queuing are irrelevant,

\textsuperscript{54} See CHX Response, supra note 6, at 10-11.
\textsuperscript{55} See FIA PTG Letter, supra note 6, at 3-4.
\textsuperscript{56} See Citadel Letter, supra note 6, at 4.
\textsuperscript{57} See CHX Response, supra note 6, at 10.
\textsuperscript{58} See Citadel Letter, supra note 6, at 8; Leuchtkaper Letter 2, supra note 6, at 4.
\textsuperscript{59} See CTC Letter, supra note 6, at 6.
\textsuperscript{60} See Leuchtkaper Letter 1, supra note 6, at 1.
stating that they exist today in every market that utilizes a continuous limit order book to rank and match orders and are a function of finite network and processing resources.\(^{61}\) The commenter responds in turn that implementing the LTAD through software could create opportunities for delays and queuing, and that the Exchange should outline how it plans to surveil for and remediate any implementation issues.\(^{62}\)

IV. **Procedings to Determine Whether to Approve or Disapprove SR-CHX-2016-16 and Grounds for Disapproval Under Consideration**

The Commission is instituting proceedings pursuant to Section 19(b)(2)(B) of the Exchange Act\(^ {63}\) to determine whether the proposed rule change should be approved or disapproved. Institution of such proceedings is appropriate at this time in view of the legal and policy issues raised by the proposed rule change. Institution of proceedings does not indicate that the Commission has reached any conclusions with respect to any of the issues involved. Rather, as stated below, the Commission seeks and encourages interested persons to provide comments on the proposed rule change.

Pursuant to Section 19(b)(2)(B) of the Exchange Act,\(^ {64}\) the Commission is providing notice of the grounds for disapproval under consideration. The Commission is instituting proceedings to allow for additional analysis of the proposed rule change’s consistency with Section 6(b)(5) of the Exchange Act, which requires, among other things, that the rules of a national securities exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers\(^ {65}\) and Section 6(b)(8) of the Exchange Act, which requires that the

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\(^{61}\) See CHX Response, supra note 6, at 15.

\(^{62}\) See Leuchtkafener Letter 2, supra note 6, at 2.


\(^{64}\) Id.

rules of a national securities exchange not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Exchange Act.

IV. Procedure: Request for Written Comments

The Commission requests that interested persons provide written submissions of their views, data, and arguments with respect to the issues identified above, as well as any other concerns they may have with the proposal. In particular, the Commission invites the written views of interested persons concerning whether the proposal is consistent with Sections 6(b)(5), 6(b)(8), or any other provision of the Exchange Act, or the rules and regulations thereunder. Although there do not appear to be any issues relevant to approval or disapproval that would be facilitated by an oral presentation of views, data, and arguments, the Commission will consider, pursuant to Rule 19b-4, any request for an opportunity to make an oral presentation.66

Interested persons are invited to submit written data, views, and arguments regarding whether the proposal should be approved or disapproved by [insert date 21 days from publication in the Federal Register]. Any person who wishes to file a rebuttal to any other person’s submission must file that rebuttal by [insert date 35 days from publication in the Federal Register]. The Commission asks that commenters address the sufficiency of the Exchange’s statements in support of the proposal, in addition to any other comments they may wish to submit about the proposed rule change.

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Comments may be submitted by any of the following methods:

**Electronic comments:**

- Use the Commission’s Internet comment form (http://www.sec.gov/rules/sro.shtml); or
- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-CHX-2016-16 on the subject line.

**Paper comments:**

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Numbers SR-CHX-2016-16. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission’s Internet website (http://www.sec.gov/rules/sro.shtml). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission’s Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of these filings also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer
to File Number SR-CHX-2016-16 and should be submitted on or before [insert date 21 days from publication in the Federal Register]. Rebuttal comments should be submitted by [insert date 35 days from date of publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.67

Eduardo A. Aleman
Assistant Secretary