

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-100798; File No. SR-CboeBYX-2024-030)

August 21, 2024

Self-Regulatory Organizations; Cboe BYX Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Adopt New Market Data Reports

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),¹ and Rule 19b-4 thereunder,² notice is hereby given that on August 15, 2024, Cboe BYX Exchange, Inc. (the “Exchange” or “BYX”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Exchange filed the proposal as a “non-controversial” proposed rule change pursuant to Section 19(b)(3)(A)(iii) of the Act³ and Rule 19b-4(f)(6) thereunder.⁴ The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

Cboe BYX Exchange, Inc. (the “Exchange” or “BYX”) proposes to adopt new market data reports. The text of the proposed rule change is provided in Exhibit 5.

The text of the proposed rule change is also available on the Exchange’s website (http://markets.cboe.com/us/equities/regulation/rule_filings/byx/), at the Exchange’s Office of the Secretary, and at the Commission’s Public Reference Room.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ 15 U.S.C. 78s(b)(3)(A)(iii).

⁴ 17 CFR 240.19b-4(f)(6).

II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend Rule 11.22 (Data Products) to adopt the Cboe Timestamping Service, which is a market data service comprised of two distinct market data reports. The Cboe Timestamping Service will provide timestamp information for orders and cancels for market participants. More specifically, the Cboe Timestamping Service reports will provide various timestamps relating to the message lifecycle throughout the exchange system. The first report – the Missed Liquidity Report – will cover order messages and the second report – Cancels Report – will cover cancel messages. The proposed reports are optional products that will be available to all Members and Members may opt to choose both reports, one report, or neither report. Corresponding fees will be assessed based on the number of reports selected.⁵

The Exchange notes that the data included in the proposed reports will be based only on the data of the market participant that opts to subscribe to the reports (“Recipient Member”) and will not include information related to any Member other than the Recipient Member. The Exchange will restrict all other market participants from receiving another market participant's data.

⁵ The Exchange plans to submit a separate filing with the Commission pursuant to Section 19(b)(1) to propose fees for the Missed Liquidity Report and Cancels Report.

Additionally, neither report includes real-time market data. Rather, the reports will contain historical data from the prior trading day and will be available after the end of the trading day, generally on a T+1 basis.

Currently, the Exchange provides real-time prices and analytics in the marketplace. The Exchange proposes to introduce the Missed Liquidity and Cancel Reports in response to Member demand for additional data concerning the timeliness of their incoming orders, cancel messages and executions against resting orders. Members have frequently requested from the Exchange's trading operations personnel information concerning the timeliness of their incoming orders, cancel messages and efficacy of their attempts to execute against resting liquidity on the Exchange's Book. The Exchange believes the additional data points outlined below may help Members gain a better understanding about their interactions with the Exchange. The Exchange believes these reports will provide Members with an opportunity to learn more about better opportunities to access liquidity and receive better execution rates and improve order cancel success. The proposed reports will also increase transparency and democratize information so that all Members that subscribe to either or both reports have access to the same information on an equal basis.

The proposed Missed Liquidity Report will provide time details for executions of orders that rest on the book where the Member receiving the report attempted to execute against that resting order within an Exchange-determined amount of time (not to exceed 1 millisecond) after receipt of the first attempt to execute against the resting order and within an Exchange-determined amount of time (not to exceed 100 microseconds) before receipt of the first attempt to execute against the resting order.⁶ For example, if a Member sends in a marketable order, but an order resting on the

⁶ The Exchange will announce the Exchange-determined timeframes with reasonable advance notice via Exchange Notice.

Exchange order book was subsequently executed, the Missed Liquidity Report can assist the Member in determining by how much time that order missed an execution.⁷

The Cancels Report will provide liquidity response time details for orders that rest on the book where the Member receiving the report attempted to cancel that resting order or any other resting order within an Exchange-determined amount of time (not to exceed 1 millisecond) after receipt of the order that executed against the resting order and within an Exchange-determined amount of time (not to exceed 100 microseconds) before receipt of the order that executed against the resting order.⁸ For example, if a market participant sends in a cancel message, but an order resting on the Exchange order book was executed prior to the system processing the cancel message, the Cancel report can assist the market participant in determining by how much time that order missed being canceled instead of executing.⁹

Both the Missed Liquidity Report and Cancels Report will include the following data elements for orders¹⁰ and cancel messages¹¹, respectively: (1) Recipient Member Firm ID; (2)

⁷ For example, Participant A submits an order that is posted to the Exchange's Book. Participant B at some point thereafter enters a marketable order to execute against Participant A's resting order. Within 500 microseconds of Participant B's submission, Participant C, also sends a marketable order to execute against Participant A's resting order. Because Participant B's order is received by the Exchange before Participant C's order, Participant B's order executes against Participant A's resting order. The proposed Report would provide Participant C (the Recipient Member of the report) the data points necessary for that firm to calculate by how much time they missed executing against Participant A's resting order.

⁸ The Exchange will announce the Exchange-determined timeframes with reasonable advance notice via Exchange Notice.

⁹ For example, Participant A submits an order that is posted to the Exchange's Book and Participant B at some point thereafter submits a marketable order to execute against Participant A's resting order. Within 500 microseconds of submission of Participant B's order, Participant A sends a cancel message to cancel its resting order. Because Participant B's order is processed at the Matching Engine by the Exchange before Participant A's cancel message, Participant B's order executes against Participant A's resting order. The proposed Report would provide Participant A the data points necessary for that firm to calculate by how much time they missed canceling its resting order.

¹⁰ The Missed Liquidity Report will only include trade events which are triggered by an order that removed liquidity on entry and will exclude trade events resulting from: elected stop orders, orders routed and executed at away venues, and peg order movements, and auctions.

¹¹ Includes individual order cancellations, mass cancels, and purge orders messages that are sent via Financial Information Exchange ("FIX") protocol or Binary Order Entry (BOE) protocol by a subscriber.

Symbol; (3) Execution ID;¹² (3) Exchange System Timestamps for orders and cancels;¹³ (4) Matching Unit number;¹⁴ (5) Queued;¹⁵ (6) Port Type;¹⁶ and (7) Aggressor Order Type.¹⁷ No specific information about resting orders on the Exchange book will be provided.

Market participants generally would use liquidity accessing orders if there is a high probability that it will execute an order resting on the Exchange order book. As noted above, the Missed Liquidity Report helps subscribing market participants to better understand by how much time they missed executing against certain resting orders. The Exchange therefore believes this report will provide greater visibility into what was missed in trading so market participants can better determine whether they want to invest in the technology to mitigate the misses. It may also allow for them to optimize their models and trading patterns to yield better execution results. Similarly, the Cancels Report will provide information that helps subscribing market participants determine how best to improve success rates with respect to canceling their orders, which reduces exposure and manages risk.

¹² The Execution ID is a unique reference number assigned by the Exchange for each trade.

¹³ Includes Network Discovery Time (which is a network hardware switch timestamp taken at the network capture point); Order Handler NIC Timestamp (which is a hardware timestamp that represents when a BOE order handler server NIC observed the message); Order Handler Received Timestamp (which is software timestamp that represents when the FIX or BOE order handler has begun processing the order after the socket read); Order Handler Send Timestamp (which represents when the FIX or BOE order handler has finished processing the order and begun sending to the matching engine); Matching Engine NIC Timestamp (which is a hardware timestamp that represents when the target matching engine server NIC observed the message); and Matching Engine Transaction Timestamp (which is a software timestamp that represents when the matching engine has started processing an event).

¹⁴ Represents the matching unit number.

¹⁵ Flag to indicate whether a message was delayed due to message in flight limits (i.e., a limit on the total number of messages in flight between an order handler and a matching engine).

¹⁶ Refers to the port type used by the session to send the applicable message.

¹⁷ Indicates whether the order type of the response order that executed against the resting order was a new order or modify message.

The Exchange notes the data information contained within the proposed Missed Opportunities Report and Cancels Report are similar to data provided in reports that currently are, or historically have been, offered by other exchanges.¹⁸

Implementation

The Exchange will announce via Exchange Notice the implementation date of the proposed rule change, which shall occur no later than 60 days after the operative date of this rule filing.

2. Statutory Basis

The Exchange believes that the proposed Cboe One Options Feed [sic] is consistent with Section 6(b) of the Act,¹⁹ in general, and furthers the objectives of Section 6(b)(5) of the Act,²⁰ in particular, in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and to protect investors and the public interest, and that it is not designed to permit unfair discrimination among customers, brokers, or dealers. The Exchange also believes this proposal is consistent with Section 6(b)(5) of the Act because it protects investors and the public interest and promotes just and equitable principles of trade by providing investors with new options for receiving market data as requested by market participants and Section 6(b)(8) of the Act, which requires that the rules of

¹⁸ The proposed Report is based on a similar report previously provided by the NASDAQ Stock Market LLC (“NASDAQ”) for equity securities called the Missed Opportunity—Latency report as part of its NASDAQ Trader Insights offering. *See* Securities Exchange Act Release No. 78886 (September 20, 2016), [81 FR 66113](#) (September 26, 2016) (SR-NASDAQ-2016-101) (Order Granting Approval of Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To Add NASDAQ Rule 7046 (Nasdaq Trading Insights)) (“NASDAQ Approval Order”). The report is also similar to a report currently provided by MIAX Emerald, LLC (“MIAX Emerald”) and its affiliates, called the Liquidity Taker Event Report. *See e.g.*, MIAX Emerald Rule 531. *See also* Securities Exchange Act Release No. 91356 (March 18, 2021), [86 FR 15759 \(March 24, 2021\) \(SR-EMERALD-2021-09\)](#).

¹⁹ 15 U.S.C. 78f.

²⁰ 15 U.S.C. 78f(b)(5).

an exchange not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act²¹. This proposal is in keeping with those principles in that it promotes increased transparency through the dissemination of the optional Missed Liquidity and Cancels Report to those interested in paying to receive either or both of these reports.

The Exchange also believes this proposal is consistent with Section 6(b)(5) of the Act because it protects investors and the public interest and promotes just and equitable principles of trade by providing investors with new options for receiving market data as requested by potential purchasers. The proposed rule change would benefit investors by facilitating their prompt access to the value-added information that is included in the proposed reports. The reports will allow Members to access information regarding their trading activity that they may utilize to evaluate their own trading behavior and order interactions. It also promotes just and equitable principles of trade because it would provide latency information in a systematized way and standardized format to any Member that chooses to subscribe to the proposed reports. As discussed, the proposed reports are also not real-time market data products, but rather provide only historical trading data for the previous trading day, generally on a T+1 basis. In addition, the data in the reports regarding incoming orders that failed to execute or incoming cancels that failed to cancel would be specific to the Recipient Member's messages. As noted above, no specific information about the resting orders on the Exchange book will be provided and any information relating to another Member would be anonymized.

In adopting Regulation NMS, the Commission granted self-regulatory organizations ("SROs") and broker dealers increased authority and flexibility to offer new and unique market data to consumers of such data. It was believed that this authority would expand the amount of

²¹ 15 U.S.C. 78f(b)(8).

data available to users and consumers of such data and also spur innovation and competition for the provision of market data. The Exchange believes that the proposed reports are the sort of market data product that the Commission envisioned when it adopted Regulation NMS.

The Commission concluded that Regulation NMS—by deregulating the market in proprietary data—would itself further the Act's goals of facilitating efficiency and competition:

“[E]fficiency is promoted when broker-dealers who do not need the data beyond the prices, sizes, market center identifications of the NBBO and consolidated last sale information are not required to receive (and pay for) such data. The Commission also believes that efficiency is promoted when broker-dealers may choose to receive (and pay for) additional market data based on their own internal analysis of the need for such data.”²²

By removing “unnecessary regulatory restrictions” on the ability of exchanges to sell their own data, Regulation NMS advanced the goals of the Act and the principles reflected in its legislative history. This proposed Cboe Timestamping Service (i.e., the Missed Liquidity and Cancels Reports) provides investors with new options for receiving market data, which was a primary goal of the market data amendments adopted by Regulation NMS.²³

The proposed reports are designed for Members that are interested in gaining insight into latency in connection with their respective (1) orders that failed to execute against an order resting on the Exchange order book and/or (2) cancel messages that failed to cancel resting orders. The Exchange believes that providing this optional data to interested market participants for a fee is consistent with facilitating transactions in securities, removing impediments to and perfecting the mechanism of a free and open market and a national market system, and, in

²² See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005) (“Regulation NMS Adopting Release”).

²³ See Regulation NMS Adopting Release, *supra*, at 37503.

general, protecting investors and the public interest because it provides additional information and insight to subscribing market participants regarding their trading activity on the Exchange. More specifically, the proposed reports provide greater visibility into exactly what was missed in trading so market participants may optimize their models and trading patterns to yield better execution results by identifying by how much time an order that may have been marketable missed executing and by how much time a cancel message missed canceling.

As mentioned above, other exchanges currently offer, or have previously offered, similar trading related reports that have been reviewed and approved by the Commission.²⁴ For example, MIAX Emerald currently offers the Liquidity Taker Event Report and Nasdaq historically provided the Missed Opportunity—Latency report as part of its NASDAQ Trader Insights offering.²⁵ MIAX Emerald’s Liquidity Taker Event Report and Nasdaq’s prior Missed Opportunity—Latency report, like the proposed Missed Liquidity Report, identify by how much time an order missed executing against a resting order. Also, like the MIAX Emerald and Nasdaq’s analogous reports, the Exchange’s proposed reports are provided on a T+1 basis and include data specific to one Member, and only that Member would receive the report. The proposed reports, like the reports of MIAX Emerald and Nasdaq, restrict all other market participants, including the Recipient Member, from receiving another market participant’s data. In addition, the proposed reports, like the MIAX Emerald and Nasdaq reports, are each intended to provide the Recipient Member with the time duration by which the order entered by the Recipient Member missed an execution or similarly, missed canceling an order before it could

²⁴ Supra Note 18.

²⁵ The Exchange notes that like Nasdaq’s Missed Opportunity—Latency report, the proposed reports cover equity securities, whereas the MIAX Emerald Liquidity Taker Event Report covers options trading. The Exchange believes this difference is of no consequence as each of these reports are intended to serve the same purpose—providing firms with an opportunity to learn more about when they may have better opportunities to access liquidity and to receive better execution rates or cancel success.

execute.²⁶ The proposed reports, along with the MIAX Emerald Liquidity Taker Event Report and/or Nasdaq Missed Opportunities -Latency reports, each include the following information:

- Recipient Member identifier
- Symbol
- Execution ID
- Order reference number (unique reference number assigned to a new order at the time of receipt)
- Exchange System Timestamps for incoming orders and cancels, including timestamps to determine the time difference between the time the first response that executes against the resting order was received by the Exchange and the time of each response sent by the Recipient Member, regardless of whether it executed or not
- The order type of the response that executes against the resting order

The proposed reports include the following information that are/were not included in either the MIAX Emerald Liquidity Taker Event Report and/or Nasdaq Missed Opportunities -Latency Report:

- Matching Unit Number. This information is specific to the Exchange's matching unit architecture
- Queued. This information indicates whether or not a message was delayed due to message in flight limits, which limits are specific to the Exchange only
- The port type

²⁶ Although not clearly defined, the Exchange believes that MIAX Emerald's Liquidity Taker Event Report also provides information relating to cancel messages. Particularly, MIAX Emerald Liquidity Taker Event Report provides, among other things, data relating to the "type of each response submitted by the Recipient Member." See MIAX Emerald Rule 5.31(a)(iii)(C). MIAX Emerald's technical specifications outline the various types of available liquidity messages including, Simple Mass Quote Cancel Request and Mass Liquidity Cancel Request See MIAX Express Interface for Quoting and Trading Options, MEI Interface Specification, Section 4.1 (Liquidity Messages), available at: [MIAX Express Interface MEI v2.2a.pdf \(miaxglobal.com\)](https://www.miaxglobal.com). The Exchange also believes that providing the same data points for cancel messages as the data provided for orders messages is of no materials consequence as the Cancels Report is intended to serve a similar purpose as the proposed Missed Liquidity Report — providing Members additional information to better understand the efficacy of their incoming orders and cancel messages.

Lastly, the proposed reports do not include the following information that is/was included in both the MIAX Emerald Liquidity Taker Event Report and Nasdaq Missed Opportunities - Latency

Report:

- Side (buy or sell). This information is already available via OPRA or the Exchange's proprietary data feeds
- Displayed price and size. This information is already available via OPRA or the Exchange's proprietary data feeds
- The time a resting order was received by the Exchange. The Exchange does not believe information relating to the time a resting order was received is as relevant as the above-described data that will be included nor is it necessary with respect to the goal of the proposed reports which is to better understand by how much time a particular order missed executing against an order resting on the Book or a cancel message missed canceling against an order resting on the Book.

As illustrated above, the proposed reports are substantially similar to the MIAX Emerald Liquidity Taker Event Report and Nasdaq's former Missed Opportunities- Latency Report and includes a number of the same data elements designed to assist Members in better understanding their trading activity on the Exchange and augment their trading strategies to improve their execution opportunities.

In approving Nasdaq's Missed Opportunity—Latency report, the Commission noted that the report “would increase transparency, particularly for Members who may not have the expertise to generate the same information.”²⁷ The Exchange's proposed reports would achieve the same goal for Members seeking to better understand the efficacy of their incoming orders and cancel messages. Further, the proposed reports promote just and equitable principles of trade because it will increase transparency and democratize information so that all firms may elect to

²⁷ *See* Securities Exchange Act Release No. 78886 (September 20, 2016), [81 FR 66113](#) (September 26, 2016) (SR-NASDAQ-2016-101) (Order Granting Approval of Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To Add NASDAQ Rule 7046 (Nasdaq Trading Insights)) (“NASDAQ Approval Order”).

subscribe to either, or both, reports even though some firms may not have the appropriate resources to generate a similar report themselves.

The Exchange proposes to provide the reports on a voluntary basis and no Member will be required to subscribe to either report. The Exchange notes that there is no rule or regulation that requires the Exchange to produce, or that a Member elect to receive, either report. It is entirely a business decision of each Member to subscribe to one, both, or neither report. The Exchange proposes to offer the reports as a convenience to Members to provide them with additional information regarding trading activity on the Exchange on a delayed basis after the close of regular trading hours. A Member that chooses to subscribe to the reports may discontinue receiving either report at any time if that Member determines that the information contained in the Report is no longer useful.

In summary, the proposed reports will help to protect a free and open market by providing additional historical data (offered on an optional basis) to the marketplace and by providing investors with greater choices. Additionally, the proposal would not permit unfair discrimination because the proposed reports will be available to all Exchange Members.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Rather, the Exchange believes that the proposed Report will enhance competition by providing a new option for receiving market data to Members. The proposed Report will also further enhance competition between exchanges by allowing the Exchange to expand its product offerings to include reports similar to a report that is currently offered by other exchanges.²⁸

²⁸ See e.g., MIAX Emerald Rule 531.

Additionally, the Exchange believes the proposed rule change does not impose any burden on intramarket competition that is not necessary or appropriate in furtherance of the purposes of the Act. Market participants are not required to purchase either proposed report, and the Exchange is not required to make either report available to investors. Rather, the Exchange is voluntarily making these reports available, as requested by Members, and Members may choose to receive (and pay for) this data based on their own business needs. Potential purchasers may request the data at any time if they believe it to be valuable or may decline to purchase such data.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not:

- A. significantly affect the protection of investors or the public interest;
- B. impose any significant burden on competition; and
- C. become operative for 30 days from the date on which it was filed, or such shorter

time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act²⁹ and Rule 19b-4(f)(6)³⁰ thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

²⁹ 15 U.S.C. 78s(b)(3)(A).

³⁰ 17 CFR 240.19b-4(f)(6).

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments:

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include file number SR-CboeBYX-2024-030 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 number SR-CboeBYX-2024-030. This file number should be included on the subject line if email 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 (<https://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 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office

of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-CboeBYX-2024-030 and should be submitted on or before [INSERT DATE 21 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.³¹

Vanessa A. Countryman,

Secretary.

³¹ 17 CFR 200.30-3(a)(12).