

SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-95601; File No. SR-CboeBZX-2022-045)

August 25, 2022

Self-Regulatory Organizations; Cboe BZX Exchange, Inc.; Notice of Filing of a Proposed Rule Change to Amend the Opening Auction Process Provided under Rule 11.23(b)(2)(B)

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the “Act”),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on August 15, 2022, Cboe BZX Exchange, Inc. (the “Exchange” or “BZX”) filed with the Securities and Exchange Commission (the “Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. 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 BZX Exchange, Inc. (the “Exchange” or “BZX”) is filing with the Securities and Exchange Commission (“Commission”) a proposal to amend the Opening Auction process provided under Rule 11.23(b)(2)(B) (the “Opening Auction Process”) to better align with current market conditions, and, where certain market conditions are not optimal, to delay the Opening Auction from occurring until those market conditions have improved. 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/bzx/](http://markets.cboe.com/us/equities/regulation/rule_filings/bzx/)), at the Exchange’s Office of the Secretary, and at the Commission’s Public Reference Room.

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

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 11.23(b)(2)(B) to make the Opening Auction Process more dynamic by, under certain circumstances delaying the Opening Auction in order to incorporate additional information into the determination of the Opening Auction price. Specifically, as proposed the Rule would provide that when there is no Valid NBBO<sup>3</sup> in a BZX-

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<sup>3</sup> As provided in Rule 11.23(a)(23), an NBBO is a Valid NBBO where: (i) there is both a NBB and NBO for the security; (ii) the NBBO is not crossed; and (iii) the midpoint of the NBBO is less than the Maximum Percentage away from both the NBB and the NBO. See Exchange Rule 11.23(a)(23). The Maximum Percentage will vary depending on the price of the NBBO midpoint. Currently, the Maximum Percentages are as follows: for a NBBO midpoint price less than or equal to \$25, the Maximum Percentage is 5%; for a NBBO midpoint price greater than \$25 but less than or equal to \$50, the Maximum Percentage is 2.5%; for a NBBO midpoint price greater than \$50, the Maximum Percentage is 1.5%. See Section 1.5 (Definitions) of the US Equities Auction Process at [https://cdn.cboe.com/resources/membership/Cboe\\_US\\_Equities\\_Auction\\_Process.pdf](https://cdn.cboe.com/resources/membership/Cboe_US_Equities_Auction_Process.pdf).

listed security and there is an Indicative Price<sup>4</sup> that is not within the Collar Price Range,<sup>5</sup> the Opening Auction will be delayed until market conditions improve or the delay period has lapsed, as further described below.

The Exchange notes that the official opening price disseminated by the primary listing market provides market participants valuable information which in most cases is used to calculate the initial limit up-limit down (“LULD”) bands and also may serve as the basis for trading strategies for that trading day. However, the official opening price is not as important or time sensitive as the official closing price disseminated by the primary listing market, which is used for the pricing and valuation of certain indices, funds and derivative products. The Exchange believes the benefit of allowing crossed auction interest to execute at the best possible price outweighs the minimal and finite delay in the dissemination of the BZX Opening Price and LULD bands. Specifically, as discussed further below, the Exchange believes that the possible downside of delaying the dissemination of the LULD bands is mitigated by the infrequency with which LULD halts occur within the first four minutes and 30 seconds of the trading day and is also offset by the benefits to the opportunity for increased executions in the Opening Auction. As further noted below, this delayed dissemination of LULD bands is also a tradeoff that already exists as it relates to the opening process on the New York Stock Exchange LLC (“NYSE”), which may delay its opening process indefinitely. Finally, the Exchange notes that because the proposed functionality would only apply where there is crossed interest that is outside the Collar Price Range and there is not a Valid

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<sup>4</sup> The term “Indicative Price” shall mean the price at which the most shares from the Auction Book and the Continuous Book would match. In the event of a volume based tie at multiple price levels, the Indicative Price will be the price which results in the minimum total imbalance. In the event of a volume based tie and a tie in minimum total imbalance at multiple price levels, the Indicative Price will be the price closest to the Volume Based Tie Breaker. See Exchange Rule 11.23(a)(10).

<sup>5</sup> See Exchange Rule 11.23(a)(6).

NBBO, the Exchange would only delay the Opening Auction (and thus delay the dissemination of the LULD bands) in certain situations. In those situations, it is more likely that the LULD bands disseminated without a delay in the Opening Auction are based on a price that is not reflective of current market conditions.

As such, the Exchange believes that the proposal strikes an appropriate balance by providing additional time for the Opening Auction Process to occur so that under such circumstances BZX-listed securities have an opportunity for more meaningful price formation that is more representative of current market conditions, but limiting any such delay so that the BZX Official Opening Price is reported to the Securities Information Processor (“SIP”) by 9:35 a.m. and will therefore be used to set the LULD bands.<sup>6</sup>

#### *Background*

As noted above, the Exchange is proposing that under limited circumstances its current Opening Auction Process would be amended to delay the process such that additional information could be incorporated into the determination of the Opening Auction price. Currently, Rule 11.23(b)(2)(B) sets forth the process by which the BZX Official Opening Price<sup>7</sup> is determined for BZX-listed securities during the Opening Auction Process. Specifically, as provided in Rule 11.23(b)(2)(B), the Opening Auction price will be the price level within the Collar Price Range that maximizes the number of shares executed between the Continuous Book<sup>8</sup> and Auction Book<sup>9</sup> in the Opening Auction. In the event of a volume based tie at multiple price levels, the Opening Auction

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<sup>6</sup> The SIP links the U.S. markets by processing and consolidating all protected bid/ask quotes and trades from every trading venue into a single data feed.

<sup>7</sup> See Exchange Rule 11.23(a)(5).

<sup>8</sup> See Exchange Rule 11.23(a)(7).

<sup>9</sup> See Exchange Rule 11.23(a)(1).

price will be the price which results in the minimum total imbalance. In the event of a volume based tie and a tie in minimum total imbalance at multiple price levels, the Opening Auction price will be the price closest to the Volume Based Tie Breaker.<sup>10</sup>

The Volume Based Tie Breaker for an Opening Auction will be the midpoint of the NBBO where there is a Valid NBBO. Where there is no Valid NBBO, the Final Last Sale Eligible Trade (“FLSET”)<sup>11</sup> will be used as the Volume Based Tie Breaker.<sup>12</sup> Because the FLSET is typically based on the most recent execution in a security during Regular Trading Hours, its value may be significantly away from the Indicative Price at the time of the Opening Auction Process, especially in more thinly traded securities. As a result, the Exchange has observed instances where auction eligible orders priced in-line with the Indicative Price were not executed in the Opening Auction because they were outside the Collar Price Range established using the FLSET. Based on analysis by the Exchange and feedback from market participants, certain of these instances resulted in orders not receiving executions in the Opening Auction that would have otherwise occurred at prices that would have been acceptable to both parties to the execution. To illustrate this point, the Exchange presents the following example.

***Example 1:***

Consider a security with a prevailing NBBO at 9:30:00 a.m. of \$27.10 x \$29.54 and two Limit-On-Open orders on the Auction Book – a buy for 1,000 shares at \$27.90 and a sell for

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<sup>10</sup> The Volume Based Tie Breaker is the midpoint of the NBBO for a particular security where the NBBO is a Valid NBBO. Where the NBBO is not a Valid NBBO, the price of the FLSET is used as the Volume Based Tie Breaker. See Exchange Rule 11.23(a)(23).

<sup>11</sup> See Exchange Rule 11.23(a)(9).

<sup>12</sup> The Exchange estimates that there is no Valid NBBO for approximately 5.81% of the Exchange’s Opening Auctions.

1,500 shares at \$27.90.<sup>13</sup> The Indicative Price, which is the price at which the most shares from the Auction Book and the Continuous Book would match, would be \$27.90 because the only crossed interest comes from the two orders on the Auction Book. Therefore, there is crossed interest willing to execute at a price within the NBBO. However, because the midpoint of the NBBO (i.e., \$28.32) is more than the Maximum Percentage<sup>14</sup> away from both the NBB and NBO, the NBBO is not a Valid NBBO and thus the NBBO midpoint would not be used as the Volume Based Tie Breaker. Instead, the Volume Based Tie Breaker would be the FLSET, which would, by definition, be the BZX Official Closing Price from the previous business day, which was \$26.52. Using the FLSET as the Collar Midpoint,<sup>15</sup> the Collar Price Range would be \$25.19 x \$27.85.<sup>16</sup> Because the Indicative Price is outside of the Collar Price Range and there is no crossed interest within the Collar Price Range, there would be no execution as part of the Opening Auction. Therefore, crossed interest from the Auction Book that was priced equal to or more aggressive than the Indicative Price and was within the NBBO would be canceled without execution.<sup>17</sup>

### *Proposal*

Based on the scenario described above, the Exchange is proposing to change its Opening Auction functionality only in circumstances where i) there is an Indicative Price, ii) there is not a

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<sup>13</sup> For purposes of this example, there are no orders on the Continuous Book.

<sup>14</sup> As noted above, the Maximum Percentage for a NBBO midpoint price greater than \$25 but less than or equal to \$50 is 2.5%.

<sup>15</sup> As provided in Rule 11.23(a)(6), the Collar Midpoint is the Volume Based Tie Breaker for Opening Auctions.

<sup>16</sup> The Collar Price Range is always double the Maximum Percentage. Therefore, the Collar Price Range in Example 1 is 5%.

<sup>17</sup> See Exchange Rule 11.23(b)(3)(C)

Valid NBBO, and/or iii) the Indicative Price is not within the FLSET-established Collar Price Range. As proposed and described in further detail below, the Opening Auction would occur pursuant to the Standard Opening Auction Process if the NBBO becomes a Valid NBBO (i.e., the spread narrows as markets open such that the midpoint of the NBBO is less than the Maximum Percentage away from both the NBB and the NBO) before 9:30:05, or if the Indicative Price moves within the Collar Price Range set by the FLSET (i.e., orders on the Auction Book and/or non-displayed orders on the Continuous Book change the price level at which the most shares from the Auction Book and the Continuous Book would match to be within the Collar Price Range) prior to 9:34:30.

Proposed Rule 11.23(b)(2)(B)(i) would set forth the “Standard Opening Process”, which mirrors the current process described in Rule 11.23(b)(2)(B). Proposed Rule 11.23(b)(2)(B)(ii) would provide that if there is no Valid NBBO and the Indicative Price is within the Collar Price Range, the Opening Auction price will be established pursuant to the Standard Opening Process. Proposed Rule 11.23(b)(2)(B)(iii) would delay and set forth an alternative Opening Auction Process in the event there is no Valid NBBO and the Indicative Price is not within the Collar Price Range. The proposal is designed to prevent the cancellation of auction eligible orders priced equally or more aggressive than the Indicative Price which the Exchange believes will facilitate the presence of sufficient liquidity and information to make the Opening Auction a meaningful price formation event in BZX-listed securities.

Proposed Rule 11.23(b)(2)(B)(iii) would provide that the Opening Auction price will be delayed as set forth in subparagraphs (a) and (b) as follows:

- (a) If after the one-second delay there is a Valid NBBO or the Indicative Price is within the Collar Price Range, the Opening Auction price will be established pursuant to

the Standard Opening Auction Process. If there is no Valid NBBO and the Indicative Price is not within the Collar Price Range after the one-second delay, the Opening Auction will be delayed by one additional second, at which point if there is a Valid NBBO or the Indicative Price is within the Collar Price Range, the Opening Auction price will be established pursuant to the Standard Opening Process. If after the additional one-second delay there is a Valid NBBO or the Indicative Price is not within the Collar Price Range, the process described in this paragraph (a) will continue to be applied in one-second increments until either the Opening Auction occurs or until five seconds has lapsed (i.e., 9:30:05 a.m.).

- (b) If the Opening Auction has not occurred by 9:30:05, the System will widen the Collar Price Range in the direction of the Indicative Price by 5% of the Volume Based Tie Breaker, which will be Final Last Sale Eligible Trade as of 9:30:05 a.m. (the “Widening Amount”).<sup>18</sup> If the Indicative Price is within the widened Collar Price Range, the Opening Auction price will be established pursuant to the Standard Opening Auction Process. If the Indicative Price is not within the widened Collar Price Range, the Opening Auction will be further delayed, as discussed below.

In sum, the process described in proposed paragraph Rule 11.23(b)(2)(B)(iii)(a) would simply allow for the Opening Auction to occur using the Standard Opening Process described in paragraph 11.23(b)(2)(B)(i), the only difference between the current process being that such Opening Auction could instead occur within the first five seconds of Regular Trading Hours<sup>19</sup> based

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<sup>18</sup> The Exchange notes that Widening Amount will be locked-in as of 9:30:05, and will not change between 9:30:05 and 9:34:30 even in the event that a round lot trade reported to the consolidated tape was received by the Exchange during that time (i.e., a FLSET).

<sup>19</sup> See Exchange Rule 1.5(w).



on whether there is a Valid NBBO or the Indicative Price is within the Collar Price Range. If, after each one-second delay, there is no longer an Indicative Price (i.e., there is no longer crossed interest), the Opening Auction would occur immediately pursuant to proposed Rule 11.23(2)(B)(v). After the first five seconds of Regular Trading Hours, the System will only check for whether the Indicative Price is within the Collar Price Range and will not check for a Valid NBBO because the process described in Proposed Rules 11.23(b)(2)(B)(iii)(b)(1) through (4) is intended to closely follow the reopening process that is described in the Twelfth Amendment of the Plan to Address Extraordinary Market Volatility<sup>20</sup> (the “Plan”) and corresponding Exchange Rules, as described in further detail below.

Proposed Rules 11.23(b)(2)(B)(iii)(b)(1) through (4) would set forth the delay of the Opening Auction if no auction has occurred between 9:30:05 and 9:34:30. Specifically, the proposed Rules would provide:

- (1) The System will check to see whether the Indicative Price is inside the widened Collar Price Range every second between 9:30:05 and 9:30:30 a.m. If an Indicative Price is inside the widened Collar Price Range during a check, the Opening Auction price will be established pursuant to the Standard Opening Auction Process.
- (2) If by 9:30:30 a.m. the Indicative Price is not within the widened Collar Price Range, the Collar Price Range will again widen by the Widening Amount. The System will check to see whether the Indicative Price is inside the widened Collar Price Range every second between 9:30:30 and 9:31:30 a.m. If an Indicative Price is inside the widened Collar Price

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<sup>20</sup> See Securities and Exchange Act no. 79410 (November 28, 2016) 81 FR 87114 (December 2, 2016) (Notice of Filing of the Twelfth Amendment to the National Market System Plan To Address Extraordinary Market Volatility (“Amendment 12”)).

Range during a check, the Opening Auction price will be established pursuant to the Standard Opening Auction Process.

- (3) If by 9:31:30 a.m. the Indicative Price is not within the widened Collar Price Range, the System will check to see whether the Indicative Price is inside the widened Collar Price Range every second between 9:31:30 and 9:34:30 a.m. If an Indicative Price is inside the widened Collar Price Range during a check, the Opening Auction price will be established pursuant to the Standard Opening Auction Process. Unless the Opening Auction has occurred, the Collar Price Range will widen in the direction of the Indicative Price by the Widening Amount each minute from 9:31:30 to 9:34:30.
- (4) If no Opening Auction has occurred by 9:34:30 a.m., the Opening Auction will occur pursuant to the Standard Opening Auction Process using the expanded Collar Price Range as of 9:34:30.

The Exchange first notes that if, during after each one-second delay, there is no longer an Indicative Price (i.e., there is no longer crossed interest), the Opening Auction would occur immediately pursuant to proposed Rule 11.23(2)(B)(v).<sup>21</sup> The Exchange is also proposing to stop extending the Opening Auction Process at 9:34:30 a.m. in part to ensure that the Exchange is able to disseminate the BZX Official Opening Price with sufficient time to be used in the determination of

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<sup>21</sup> The Exchange notes that the BZX Official Opening Price will be the price of the FLSET, which will be the previous BZX Official Closing Price unless an FLSET occurred after 9:30:00.

the opening price<sup>22</sup> pursuant to the Plan, from which the reference price<sup>23</sup> is used to calculate the LULD bands. Specifically, the reference price for trading is typically the opening price on the primary listing exchange in an NMS Stock if such opening price occurs less than five minutes after the start of Regular Trading Hours. Therefore, because under the proposal the Opening Auction Process would occur no later than 9:34:30, the LULD bands would be determined based on the BZX Official Opening Price. While the LULD bands for BZX-listed securities could be determined pursuant to the Plan without a BZX Official Opening Price, the Exchange believes that the inclusion of such price provides for LULD bands that more accurately reflect current market conditions.

The Exchange also proposes to move the last two sentences of existing Rule 11.23(b)(2)(B) to proposed Rules 11.23(b)(2)(B)(iv) and (v), respectively, with certain modifications to Rule 11.23(b)(2)(B)(v). Specifically, proposed Rule 11.23(b)(2)(B)(iv) would provide that the Opening Auction Price will be the BZX Official Opening Price. Proposed Rule 11.23(b)(2)(B)(v) would provide that in the event that there is no Opening Auction for an issue, the BZX Official Opening Price will be the price of the FLSET. The Exchange proposes to eliminate the provision that states

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<sup>22</sup> For purposes of the Plan, “opening price” shall mean the price of a transaction that opens trading on the primary listing exchange. If the primary listing exchange opens with quotations, the “opening price” shall mean the closing price of the NMS Stock on the primary listing exchange on the previous trading day, or if no such closing price exists, the last sale on the primary listing exchange.

See section I(I) of the Plan.

<sup>23</sup> For purposes of the plan, “reference price” shall have the meaning provided in Section V of the Plan. See section I(R) of the Plan. Section V of the Plan provides that the LULD price bands are based on a reference price for each NMS Stock that, for purposes of the first reference price for a trading day shall be the opening price on the primary listing exchange in an NMS Stock if such opening price occurs less than five minutes after the start of Regular Trading Hours. If the opening price on the primary listing exchange in an NMS Stock does not occur within five minutes after the start of Regular Trading Hours, the first reference price for a trading day shall be the arithmetic mean price of eligible reported transactions for the NMS Stock over the preceding five minute time period. If there is no opening price on the primary listing exchange in an NMS Stock and no trades have occurred by 9:35:00, the previous reference price shall remain in effect.

that the FLSET will be the previous BZX Official Closing Price as it is possible that an FLSET may occur between 9:30:00 and 9:34:30.

Based on the above proposed amendments, the Exchange proposes to amend Rules 11.23(b)(1)(A) and (B) to reflect that the Opening Auction may occur at a time other than 9:30 a.m. Specifically, the Exchange proposes to amend paragraph (A) to provide the following: Users may submit orders to the Exchange as set forth in Rule 11.1. Any Eligible Auction Orders<sup>24</sup> designated for the Opening Auction will be queued for participation in the Opening Auction. Users may submit limit-on-open (“LOO”) and market-on-open (“MOO”) orders until 9:28 a.m., at which point any additional LOO and MOO orders submitted to the Exchange will be rejected. Regular Hours Only<sup>25</sup> (“RHO”) market orders will also be rejected from 9:28 a.m. until the Opening Auction has concluded. Users may submit late-limit-on-open<sup>26</sup> (“LLOO”) orders from 9:28 a.m. until the Opening Auction has concluded. Any LLOO orders submitted before 9:28 a.m. or after the Opening Auction has concluded will be rejected. RHO limit orders submitted from 9:28 a.m. until the Opening Auction has concluded will be treated as LLOO orders.

The Exchange proposes to amend Rule 11.23(b)(1)(B) to provide that Eligible Auction Orders designated for the Opening Auction may not be cancelled or modified from 9:28 a.m. until the Opening Auction has concluded except that RHO limit orders designated for the Opening Auction may be modified, but not cancelled, from 9:28 a.m. until the time the Opening Auction has concluded. Any such RHO limit orders modified from 9:28 a.m. until the Opening Auction has concluded will be treated as LLOO orders.

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<sup>24</sup> See Exchange Rule 11.23(a)(8).

<sup>25</sup> See Exchange Rule 11.9(b)(7).

<sup>26</sup> See Exchange Rule 11.23(a)(12).

To illustrate the proposed functionality, consider the following examples.

***Example 2***

Applying the same facts from Example 1 related to current functionality above, assume a security has a prevailing NBBO at 9:30:00 a.m. of \$27.10 x \$29.54 and two Limit-On-Open orders on the Auction Book – a buy for 1,000 shares at \$27.90 and a sell for 1,500 shares at \$27.90.<sup>27</sup> The Indicative Price, which is the price at which the most shares from the Auction Book and the Continuous Book would match, would be \$27.90 because the only crossed interest comes from the two orders on the Auction Book.

Because there was no Valid NBBO and the Indicative Price was outside of the Collar Price Range, the System would check at each second starting at 9:30:00 and ending at 9:30:05 for a Valid NBBO and for the Indicative Price that is within the Collar Price Range. Assuming that these checks did not find a Valid NBBO or an Indicative Price within the Collar Price Range, after the check at 9:30:05 the Collar Price Range is widened in the direction of the Indicative Price by 5% of the FLSET (i.e., \$26.52) as of 9:30:05, or \$1.33, resulting in a Collar Price Range of \$25.19 x \$29.18. Upon the first one second check thereafter, the Indicative Price of \$27.90 is within the widened Collar Price Range and the auction occurs immediately pursuant to the Standard Opening Auction Process.

***Example 3***

Applying the facts from Example 2 above, but also considering that another two orders exist on the Auction Book including a buy order for 2,000 shares at \$30.50 and a sell order for 500 shares at \$30.50.<sup>28</sup> The additional orders entered to the Auction Book would move the Indicative Price to

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<sup>27</sup> For purposes of this example, there are no orders on the Continuous Book.

<sup>28</sup> For purposes of this example, assume there are no orders on the BZX Continuous Book.

\$30.50 because \$30.50 would be the price at which the most shares would match (i.e., 2,000 shares). Given that the Indicative Price (\$30.50) is not within the widened Collar Price Range calculated above (\$25.19 x \$29.18), the Opening Auction would not occur after the first collar widening. As such, the System would check at each second starting at 9:30:05 and ending at 9:30:30 for an Indicative Price that is within the Collar Price Range. Assuming that the Indicative Price did not change and thus the checks would not find an Indicative Price within the Collar Price Range, after the check at 9:30:30 the Collar Price Range would once again be widened in the direction of the Indicative Price by the same 5% amount used for the initial collar widening at 9:30:05 (\$1.33). The Collar Price Range from 9:30:30 to 9:31:30 would then be \$25.19 x \$30.51. Upon the first one second check thereafter, the Indicative Price of \$30.50 is within the widened Collar Price Range and the auction would occur immediately pursuant to the Standard Opening Auction Process.

***Example 4***

Applying the facts from Example 3 above, but replacing the two additional orders to the Auction Book a buy order for 2,000 shares at \$34.75 and a sell order for 500 shares at \$34.75. The orders entered to the Auction Book would move the Indicative Price to \$34.75 because \$34.75 would be the price at which the most shares would match (i.e., 2,000 shares). Given that the Indicative Price (\$34.75) is not within the widened Collar Price Range calculated above at 9:30:30 (\$25.19 x \$30.51), the Opening Auction would not occur after the second collar widening. As such, the System would check at each second starting at 9:30:30 and ending at 9:31:30 for the Indicative Price being within the Collar Price Range. Assuming that the Indicative Price did not change and thus the checks would not find an Indicative Price within the Collar Price Range, after the check at 9:31:30 the Collar Price Range would again widen in the direction of the Indicative Price by the same 5% amount used for the initial collar widening at 9:30:05 (i.e., \$1.33). Therefore, the Collar

Price Range would be \$25.19 x \$31.84 for the period between 9:31:30 and 9:32:30. Again, assuming there is no change to the Indicative Price, at 9:32:30 the Collar Price Range would widen by \$1.33 in the direction of the Indicative Price, which would be \$25.19 x \$33.17 for the period between 9:32:30 and 9:33:30. Again, assuming there is no change to the Indicative Price, at 9:33:30 the Collar Price Range would widen by \$1.33 in the direction of the Indicative Price, which would be \$25.19 x \$34.50 for the period between 9:33:30 and 9:34:30. At this point, the Indicative Price (i.e., \$34.75) remains higher than the top end of the Collar Price Range (i.e., \$34.50). As such, the Opening Auction would occur at 9:34:30, but would occur within the final Collar Price Range at \$27.91, which is the price level tied for the most volume (i.e., 1,500 shares), lowest imbalance (i.e., 500 shares), and closest to the Volume Based Tie Breaker (i.e., the FLSET of \$26.52), instead of at the Indicative Price.

As described above, the current functionality described in Example 1 would result in no opening auction because all crossed interest was outside the Collar Price Range set using the FLSET. Examples 2 and 3 demonstrate scenarios in which the proposed functionality of delaying the Opening Auction Process and widening the Collar Price Range would allow participants to execute in an opening auction that would occur at a price more reflective of current market conditions, and that would permit the greatest volume of crossed interest to execute. Alternatively, Example 4 demonstrates that even with the proposed delay and widened Collar Price Range, the Opening Auction may not occur at a price for which any or all crossed interest may execute. The Exchange includes Example 4 in order to illustrate that not all crossed interest in an auction should necessarily be executed and that at some point the benefit of continuing to delay the Opening Auction would be outweighed by the need to establish the BZX Official Opening Price, in particular

to ensure that it is reported to the SIP in advance of 9:35 a.m. so that it can be used as the reference price from which the LULD bands are calculated.

Under the proposal, the Opening Auction would be delayed until either 1) the NBBO becomes a Valid NBBO, 2) the Indicative Price is within the Collar Price Range (i.e., if the Opening Auction occurred between 9:30:01 and 9:30:05) or within the widened Collar Price Range (i.e., if the Opening Auction occurred between 9:30:06 and 9:34:30), or 3) the delay period of four minutes and 30 seconds lapsed. While the proposal does not guarantee that certain orders priced equally or more aggressive to the Indicative Price will execute in the Opening Auction, it provides for additional time for the market to develop at the beginning of the trading day before conducting the Opening Auction.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act.<sup>29</sup> Specifically, the proposed change is consistent with Section 6(b)(5) of the Act,<sup>30</sup> because it would promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, protect investors and the public interest. The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act, which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and to enforce compliance by the Exchange's Members and persons associated with its Members with the Act, the rules and regulations thereunder, and the rules of the Exchange.<sup>31</sup> Generally, the Exchange believes that

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<sup>29</sup> 15 U.S.C. 78f(b).

<sup>30</sup> 15 U.S.C. 78f(b)(5).

<sup>31</sup> 15 U.S.C. 78f(b)(1).



the proposed changes will improve the price discovery process in the Opening Auction for securities listed on the Exchange along with additional benefits set forth below.

First, the Exchange believes proposed Rules 11.23(b)(2)(B)(i) and (ii) are consistent with the Act as the proposed paragraphs are substantially similar to existing Rule 11.23(b)(2)(B) and involve no change in the Opening Auction functionality. Second, the Exchange believes proposed Rule 11.23(b)(2)(B)(iii) would promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, protect investors and the public interest. The proposal is designed to increase the likelihood that auction eligible orders that are priced equally or more aggressive than the Indicative Price of the security are able to participate in the Opening Auction instead of being canceled because they are priced outside the Collar Price Range established using the FLSET. As stated above, current Rule 11.23(b)(2)(B) provides that in the event there is no Valid NBBO, the FLSET will be used as the Volume Based Tie Breaker and basis for calculating the Collar Price Range. Because the current Opening Auction Process occurs at 9:30:00 a.m., such a Collar Price Range is based on an FLSET that may not have occurred recently or may not otherwise be reflective of current market conditions. As a result, the Exchange has observed instances where auction eligible orders priced equally or more aggressive than the Indicative Price were canceled without execution because they were outside the Collar Price Range established using the FLSET. While these observed instances have been infrequent, the Exchange believes it is important to ensure that the BZX Opening Process is designed to maximize the greatest volume of executions so that the BZX Official Opening Price accurately reflects current market conditions and to allow for executions between willing buying

and sellers. Further to this point, Market-On-Open orders (also known as MOO orders)<sup>32</sup> are market orders only eligible for execution in the Opening Auction that are designed for participants that want to get an execution without regard to price. Because such orders are not price sensitive, they are more likely to cross contra-side orders outside of the Collar Price Range and the Exchange believes that the greater opportunity for execution afforded by the proposed changes will create a better opening process for such MOO orders. From January 1, 2022 through July 12, 2022 there have been 324 instances in which MOO orders did not receive an execution in the Opening Auction and were thus cancelled. In 168 of those instances the Opening Auction would have been extended under the proposed changes to the BZX Opening Process and 10,936 shares could have potentially received an execution.<sup>33</sup> As noted above, the proposed new functionality would result in extending the Opening Auction relatively infrequently, but could be particularly meaningful for orders that are willing to execute in the Opening Auction, especially where such orders are Market-On-Open orders that are looking for an execution without price sensitivity. Further, the Exchange believes that the possible downside of delaying the dissemination of the LULD bands is mitigated by the infrequency with which LULD halts occur within the first four minutes and 30 seconds of the trading day and is also offset by the benefits to the opportunity for increased executions in the

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<sup>32</sup> As defined in Rule 11.23(a)(16), the term “Market-On-Open” or “MOO” shall mean a BZX market order that is designated for execution only in the Opening Auction.

<sup>33</sup> This calculation is across 73,927 total Opening Auctions in BZX-listed securities during the applicable period. The Exchange notes that this calculation only includes MOO orders that were not executed and would thus not include the following scenarios: (i) Limit-On-Open orders that were crossed with MOO orders (although the MOO order portion is captured), other Limit-On-Open orders, or limit orders on the Continuous Book; and (ii) limit orders in the Continuous Book that were crossed with MOO orders (although the MOO order portion is captured). The Exchange believes that the MOO orders likely represent the majority of the instances in which crossed-interest was unexecuted because it was outside of the Collar Price Range because MOO orders are submitted for participation in the Opening Auction more frequently than very aggressively priced Limit-On-Open orders.

Opening Auction. As further noted below, this delayed dissemination of LULD bands is also a tradeoff that already exists as it relates to the opening process on the NYSE.

The Exchange is not aware of any issues that the proposal would create and does not expect the proposal to impact other markets that trade BZX-listed securities pursuant to unlisted trading privileges (“UTP”) in a manner that is not necessary or appropriate in furtherance of the purposes of the Act. For example, the proposal will have no impact on the UTP opening process for the Exchange’s affiliated markets, Cboe BYX Exchange, Inc. (“BYX”), Cboe EDGA Exchange, Inc. (“EDGA”), and Cboe EDGX Exchange, Inc. (“EDGX” and collectively with BYX and EDGA referred to as the “Cboe Exchanges”). Each of the Cboe Exchanges provide for an opening process for securities listed pursuant to UTP (the “UTP Opening Process”),<sup>34</sup> which state that the opening process “will be priced at the midpoint of the first NBBO subsequent to the first two-sided quotation published by the listing exchange after 9:30:00 a.m. Eastern Time.”<sup>35</sup> Such process occurs regardless of NBBO width. Because the Exchange will continue to disseminate an NBBO regardless of the timing of the Opening Auction and the UTP Opening Process takes place where there is a “two-sided quotation published by the listing exchange,” the proposed new functionality will have no impact on the UTP Opening Process rules of the Cboe Exchanges. Further to this point, the Exchange notes that MIAX Pearl Exchange, an exchange that only offers UTP trading, has identical language related to its opening process and, therefore, the Exchange would not expect this change to have an impact on its opening process.<sup>36</sup>

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<sup>34</sup> See BYX Rule 11.23, EDGA Rule 11.7, and EDGX Rule 11.7 (collectively, the “UTP Opening Process Rules”).

<sup>35</sup> See paragraph (c)(2) of UTP Opening Process Rules.

<sup>36</sup> See MIAX Pearl Exchange Rule 2615, particularly Rule 2615(c)(2).

Furthermore, the Exchange notes that it is the responsibility of each exchange that offers UTP trading to establish and maintain their opening process for UTP securities such that it works with the opening process of the applicable primary listing venue. The Exchange believes that it is generally in the public interest for a primary listing venue to improve the price discovery process for its listed securities and that the rule filing process provides the opportunity for anyone to provide public comment on any issues that might offset such benefits, including operational issues for exchanges offering UTP trading. The Cboe Exchanges' UTP Opening Process was designed with the opening process of the primary listing venue for the UTP security in mind and provides different processes depending on the listing exchange of the applicable UTP security.<sup>37</sup> Because certain exchanges allow for a security to be opened manually, which often results in an opening that occurs after 9:30:00 a.m. ET, the UTP Opening Process rules differentiate the opening process based on the listing exchange of the applicable UTP security. As such, other exchanges have presumably also designed and maintain their respective UTP opening processes with an eye toward the opening process of the primary listing exchange. To the extent that the proposed change hypothetically created issues for the UTP opening process of other market centers or that such other market centers otherwise disagree with the Exchange's proposed new functionality, no such issues have been raised through the public comment process. Accordingly, the Exchange believes that its proposal benefits investors generally by enhancing the Exchange's price discovery process for Opening Auctions without any anticipated impact to other UTP exchanges and, as such, that the proposal is consistent with the Act.

The Exchange also believes the proposal strikes a balance between providing a better price discovery mechanism by offering additional execution opportunities for auction eligible orders

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<sup>37</sup> See paragraphs (c)(1) and (c)(2) of the UTP Opening Process rules.

priced equally or more aggressive than the Indicative Price of the security and limiting any such delay so that the BZX Official Opening Price is reported to the SIP by 9:35 a.m. and will therefore be used to set the LULD bands. The Exchange notes that, while there will be no LULD bands until the Exchange disseminates a reference price and thus there will be no LULD bands during the period before the Opening Auction Process occurs, this is a tradeoff that already exists as it relates to the opening process on the NYSE, which may delay the opening process for an indefinite period of time. The Exchange also notes that LULD bands disseminated during the circumstances in which the proposed delay would be applied are more likely to be based on a price that may not be reflective of current market conditions. For example, in situations where the proposed delay would be applied, the LULD bands would be based off an FLSET that occurred on the prior trading day, and thus the LULD bands could be based on a stale price. The Exchange is only proposing to delay the Opening Auction in circumstances where there is crossed interest and no Valid NBBO meaning that there are parties willing to execute at a particular price and the NBBO is not narrow enough to provide any meaningful guidance about the actual market value of the security. Therefore, the Exchange believes any potential drawback in a delay of the LULD bands is mitigated by the limited circumstances in which the delay would occur and that any LULD bands disseminated during such a delay may not be reflective of current market conditions. Delaying the opening auction process under certain circumstances provides an opportunity for more meaningful price formation that is more representative of current market conditions, especially in thinly traded or less liquid securities which are by definition less likely to have executions during the period before the Opening Auction Process occurs. Further to this point, the Exchange expects that: (i) the Opening Auction Process will not be delayed frequently; and (ii) even where the Opening Auction Process is delayed, it is

unlikely that the price of the underlying security will hit a price at which it would have been subject to an LULD halt if the Exchange had not delayed the Opening Auction Process.<sup>38</sup>

Separately, the Exchange believes that creating functionality that could delay the Opening Auction Process by four minutes and 30 seconds is consistent with the Act because it also ensures that the Exchange's opening process is used to determine the LULD band reference price. If the opening price on a primary listing exchange is not reported to the SIPs within five minutes after the start of Regular Trading Hours, the first reference price for a trading day is the arithmetic mean price of eligible reported transactions for the NMS stock over the preceding five minute period.<sup>39</sup> However, if no eligible reported transactions have occurred in the NMS stock over the preceding five minute period, there will be no reference price and thus no LULD bands in the security until an eligible reported transaction occurs. The Exchange believes that LULD bands are an important mechanism for investor protection, especially in thinly traded or illiquid securities and, as such, is proposing to calculate a BZX Official Opening Price no later than 9:34:30 a.m. which will allow it to continue to report the BZX Official Opening price to the SIP prior to 9:35 a.m. so that it serves as the reference price on which the LULD bands are based.

To the extent that the Exchange's proposed opening process results in a more accurate BZX Official Opening Price, it follows that such a price would also provide a better foundation for the LULD bands without negatively impacting the LULD process because the Exchange would continue to provide the BZX Official Opening Price to the SIP prior to 9:35. As a result, the Exchange believes that the proposal would promote just and equitable principles of trade, remove

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<sup>38</sup> The Exchange notes that during the period of June 1, 2021 through May 31, 2022, a LULD halt occurred in BZX listed symbols during the first four minutes and 30 seconds of the trading day roughly 0.01% of the time (15/134,615).

<sup>39</sup> See Section V(B)(2) of the Plan.

impediments to and perfect the mechanism of a free and open market and a national market system and, in general, protect investors and the public interest.

The Exchange notes that the concept of delaying an auction and widening the Collar Price Range as provided in proposed paragraphs 11.23(b)(2)(B)(iii)(b)(1) through (4) is similar to the Twelfth Amendment of the Plan and corresponding amendments by the primary listing exchanges. Specifically, Amendment 12 was created to improve re-openings following a trading pause,<sup>40</sup> with an eye towards carefully balancing halt auction price quality and the speed with which continuous trading can be resumed. Amendment 12 provided that auction halt periods would be extended if either the auction price at which the most shares would be traded is outside the range of the pre-defined price threshold collars (the “price threshold collars”) or there is a market order share imbalance. Further, Amendment 12 provided that the price threshold collars would be widened in the event that the auction’s halt period is extended. In its approval of Amendment 12, the Commission stated that it is appropriate in the public interest, for the protection of investors and the maintenance of a fair and orderly market to provide that a trading pause continue until the primary listing exchange has reopened trading using its established reopening procedures, even if such reopening is more than 10 minutes after the beginning of a trading pause, and to require that trading centers may not resume trading in an NMS Stock following a trading pause without price bands in such NMS Stock. The Commission stated that these two provisions together support a more standardized process for reopening trading after a trading pause has been declared.

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<sup>40</sup> A “trading pause” refers to a function of the LULD mechanism provided under the Plan. Specifically, the Plan sets for procedures that provide for market-wide LULD requirements that prevent trades in individual NMS stocks from occurring outside of the specified price bands and provides for trading pauses to accommodate more fundamental price moves.

As a primary listing exchange, the Exchange amended Rule 11.23(d) to incorporate the provisions of Amendment 12.<sup>41</sup> Specifically, under Rule 11.23(d)(1)(A) the Quote-Only Period<sup>42</sup> with respect to a halt auction commences five (5) minutes prior to such halt auction. Adopted Rule 11.23(d)(2)(C) provides for the Quote-Only Period to be extended an additional five (5) minutes should a halt auction be unable to be performed due to Market Order<sup>43</sup> imbalance under 11.23(d)(2)(B)(i)<sup>44</sup> or if the indicative price, before being adjusted for halt auction collars, is outside the halt auction collars set forth in adopted subparagraphs (i)<sup>45</sup> and (ii)<sup>46</sup> to Exchange Rule 11.23(d)(2)(C) (either, an “Impermissible Price”) (“Initial Extension Period”). Similar to the proposal, Rule 11.23(d)(2)(C)(ii) provides that at the beginning of the Initial Extension Period the upper (lower) halt auction collar shall be increased (decreased) by five (5) percent in the direction of the Impermissible Price, rounded to the nearest minimum price variation. For securities with a halt auction reference price of \$3.00 or less, the halt auction collar shall be increased (decreased) in

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<sup>41</sup> See Securities Exchange Act No. 75879 (October 26, 2016) 81 FR 75875 (November 1, 2016) (SR-BatsBZX-2016-61) (Notice of Filing of a Proposed Rule Change To Amend Exchange Rule 11.23, Auctions, To Enhance the Reopening Auction Process Following a Trading Halt Declared Pursuant to the Plan To Address Extraordinary Market Volatility Pursuant to Rule 608 of Regulation NMS). See also Securities Exchange Act No. 79885 (January 26, 2017) 82 FR 8968 (February 1, 2017) (SR-BatsBZX-2016-61) (Order Granting Approval of Proposed Rule Change, as Modified by Amendment No. 1, To Amend Exchange Rule 11.23, Auctions, To Enhance the Reopening Auction Process Following a Trading Halt Declared Pursuant to the Plan To Address Extraordinary Market Volatility Pursuant to Rule 608 of Regulation NMS)

<sup>42</sup> “Quote-Only Period” is defined as “a designated period of time prior to a halt auction, a Volatility Closing Auction, or an IPO Auction during which Users may submit orders to the Exchange for participation in the auction.” See Exchange Rule 11.23(a)(17).

<sup>43</sup> See Rule 11.9(a)(2).

<sup>44</sup> Under 11.23(d)(2)(B)(i), the Quote-Only Period may be extended where there are unmatched Market Orders on the Auction Book associated with the auction.

<sup>45</sup> Rule 11.23(d)(2)(C)(i) provides for the initial halt auction collar calculations.

<sup>46</sup> Rule 11.23(d)(2)(C)(ii) provides for the widening of the halt auction collars.



\$0.15 increments in the direction of the Impermissible Price. At the beginning of each additional extension period, the halt auction collar shall be widened in accordance with this paragraph by the same amount as the Initial Extension Period. In its approval order,<sup>47</sup> the Commission stated that “extending the Trading Pause and widening the halt auction collar on the side of the Impermissible Price would be a measured approach to provide additional time to attract offsetting interest, to help to address an imbalance that may not be resolved within the prior halt auction collars, and to reduce the potential for triggering another Trading Pause.”

The Exchange notes that the purpose of Amendment 12 and corresponding Exchange amendment was intended to delay a halt auction to attract offsetting interest, while the purpose of this proposal is intended to delay the Opening Auction Process in order to provide the Opening Auction price additional time to reflect current market conditions. While Exchange Rule 11.23(d) and Amendment 12 apply only to re-opening auctions that are single venue liquidity events and this proposal applies to the opening auction which is not a single venue liquidity event,<sup>48</sup> applying a common functionality across the two remains logical because the Exchange believes that delaying the Opening Auction Process under certain conditions such that the delay will be coincident with the increasing liquidity that comes shortly after the beginning of Regular Trading Hours, which the Exchange believes is similar to extending halt auctions in order to allow for greater participation and simultaneous expansion of executable price range. Even though trading is ongoing while the Opening Auction Process is underway, orders on the Continuous Book are included in the Opening Auction Process and the increased liquidity around the open will generally increase liquidity in the

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<sup>47</sup> Supra note 26.

<sup>48</sup> The Exchange’s Opening Auction is not a single venue liquidity event because trading is occurring on the Exchange’s Continuous book and at away market centers before and during the Opening Auction.

Opening Auction Process even if market participants are entering orders in the Continuous Book rather than auction specific orders. To this point, both are designed to balance auction price quality and the speed with which an auction can occur and thus continuous trading can be resumed, in the case of a halt auction, or when the Opening Auction Process completes, in the case of an Opening Auction. Further, this consistency in approach offers a process that market participants are already familiar with. Having consistent auction processes benefits all investors because market participants are already familiar with the proposed functionality and will not have to learn a new set of nuanced rules designed to accomplish the same end goal, will understand how the functionality operates because of its common usage in the LULD context, and will generally help with quick understanding and adoption while reducing the need for market participants to build systems designed to accommodate an entirely new process. Therefore, the Exchange believes the proposal is appropriate, in the public interest, for the protection of investors and the maintenance of a fair and orderly market.

The Exchange also believes its proposal to the last two sentences of existing Rule 11.23(b)(2)(B) to paragraphs 11.23(b)(2)(B)(iv) and (v), respectively, will improve clarity and readability of the rule. Further, the proposal to remove the provision of paragraph 11.23(b)(2)(B)(v) that states the FLSET will be the previous BZX Official Closing Price is consistent with the new proposed functionality, which would allow for an FLSET to occur between 9:30 and 9:34:30.

Finally, the Exchange believes its proposed clarifications to Rules 11.23(b)(1)(A) and (B) to reflect that the Opening Auction may occur at a time other than 9:30 a.m. will allow the Exchange to more easily administer its rules, and Members can more clearly understand how the Opening Auction Process may occur. Specifically, the proposed amendments to Rules

11.23(b)(1)(A) and (B) will add clarity, transparency and internal consistency to Exchange rules making them easier to navigate, in light of the other proposed Rule changes described herein.

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 not necessary or appropriate in furtherance of the purposes of the Act. To the contrary, allowing the Exchange to make the above proposed modifications will allow the Exchange to better compete with other exchanges as a listing venue by improving the Exchange's auction process by allowing more executions to occur at more reasonable prices that are based on the current value of the security. As mentioned above, the Exchange has received feedback from market participants regarding the issue under the current process, and the proposed amendments will both address this feedback and improve the Exchange's auction process, allowing it to better compete as both a listing and execution venue.

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

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission will:

A. by order approve or disapprove such proposed rule change, or

B. institute proceedings to determine whether the proposed rule change should be disapproved.

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 (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number SR-CboeBZX-2022-045 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-CboeBZX-2022-045. 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 such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change.

Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-CboeBZX-2022-045 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>49</sup>

J. Matthew DeLesDernier,  
Deputy Secretary.

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<sup>49</sup> 17 CFR 200.30-3(a)(12).