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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 19b-4

File No. * SR 2025 - * 04

Amendment No. (req. for Amendments *)

Filing by Investors' Exchange LLC

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

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|--|---|--|--|--|---|
| Initial * <input checked="" type="checkbox"/> | Amendment * <input type="checkbox"/> | Withdrawal <input type="checkbox"/> | Section 19(b)(2) * <input type="checkbox"/> | Section 19(b)(3)(A) * <input checked="" type="checkbox"/> | Section 19(b)(3)(B) * <input type="checkbox"/> |
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| Pilot <input type="checkbox"/> | Extension of Time Period for Commission Action * <input type="checkbox"/> | Date Expires * <input type="text"/> | Rule <input type="checkbox"/> 19b-4(f)(1) <input type="checkbox"/> 19b-4(f)(4) <input type="checkbox"/> 19b-4(f)(2) <input type="checkbox"/> 19b-4(f)(5) <input type="checkbox"/> 19b-4(f)(3) <input checked="" type="checkbox"/> 19b-4(f)(6) | | |
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Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010
Section 806(e)(1) *

Section 806(e)(2) *

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934
Section 3C(b)(2) *

Exhibit 2 Sent As Paper Document

Exhibit 3 Sent As Paper Document

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Proposed Rule Change to Amend IEX Rule 11.190 to Retire One of the Two Proprietary Mathematical Calculations the Exchange Utilizes to Assess the Probability of an Imminent Change to the Protected Quotation.

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * Nathaniel Last Name * Kolodny

Title * Lead Regulation Counsel

E-mail * nathaniel.kolodny@iextrading.com

Telephone * (646) 343-2034 Fax

Signature

Pursuant to the requirements of the Securities Exchange of 1934, Investors' Exchange LLC has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

Date 03/04/2025

(Title *)

By Nathaniel Kolodny

Lead Regulation Counsel

(Name *)

NOTE: Clicking the signature block at right will initiate digitally signing the form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

Nathaniel Kolodny
Digitally signed by Nathaniel Kolodny
Date: 2025.03.04 16:39:16 -05'00'

Required fields are shown with yellow backgrounds and astericks.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EDFS website.

Form 19b-4 Information *

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CQI 1 retirement 19b4 - SEC filing.doc

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

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CQI 1 retirement Ex. 1 - SEC filing.doc

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A - Notice of Proposed Rule Change, Security-Based Swap Submission, or Advanced Notice by Clearing Agencies *

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2- Notices, Written Comments, Transcripts, Other Communications

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Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit Sent As Paper Document

Exhibit 3 - Form, Report, or Questionnaire

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Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit Sent As Paper Document

Exhibit 4 - Marked Copies

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The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

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CQI 1 retirement Ex. 5 - SEC filing.doc

The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change

Partial Amendment

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If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

1. Text of Proposed Rule Change

(a) Pursuant to the provisions of Section 19(b)(1) under the Securities Exchange Act of 1934 (“Act”),¹ and Rule 19b-4 thereunder,² Investors Exchange LLC (“IEX” or “Exchange”) is filing with the Securities and Exchange Commission (“Commission”) a proposed rule change to amend IEX Rule 11.190 to retire one of the two proprietary mathematical calculations the Exchange utilizes to assess the probability of an imminent change to the Protected Quotation.³ Specifically, the Exchange proposes to retire CQI 1,⁴ and references thereto in IEX Rule 11.190, because the Exchange has determined that CQI 2⁵ provides incrementally more protection, is used more frequently, and there is considerable overlap between the protection provided by both CQIs. The Exchange has designated this proposal as non-controversial and provided the Commission with the notice required by Rule 19b-4(f)(6)(iii) under the Act.⁶

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1. The text of the proposed rule change is attached as Exhibit 5.

(b) The Exchange does not believe that the proposed rule change will have any direct effect, or any significant indirect effect, on any other Exchange rule in effect at the time of this filing.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ See IEX Rule 1.160(bb).

⁴ See IEX Rule 11.190(g)(1) (referring to CQI 1 as “Option 1 Crumbling Quote”).

⁵ See IEX Rule 11.190(g)(2) (referring to CQI 2 as “Option 2 Crumbling Quote”).

⁶ 17 CFR 240.19b-4(f)(6)(iii).

(c) Not applicable.

2. Procedures of the Self-Regulatory Organization

Senior management has approved the proposed rule change pursuant to authority delegated to it by the Board of the Exchange. No further action is required under the Exchange's governing documents. Therefore, the Exchange's internal procedures with respect to the proposed rule change are complete.

The persons on the Exchange staff prepared to respond to questions and comments on the proposed rule change are:

Claudia Crowley
Chief Regulatory Officer
Investors Exchange LLC
646-343-2041

Nathaniel Kolodny
Lead Regulation Counsel
Investors Exchange LLC
646-343-2034

3. Self-Regulatory Organization's Statement on the Purpose of, and Statutory Basis for, the Proposed Rule Change

a. Purpose

The Exchange currently uses two proprietary mathematical calculations -- "CQI 1" and "CQI 2" -- to make quote instability determinations for certain order types (i.e., to assess the probability of a "crumbling quote" -- an imminent change to the current Protected NBB⁷ to a lower price or a Protected NBO⁸ to a higher price for a particular security). Each of these calculations is referred to as the "crumbling quote indicator" or "CQI." Currently, CQI 2 is used to make quote instability determinations for all

⁷ See IEX Rule 1.160(cc).

⁸ See IEX Rule 1.160(cc).

Discretionary Limit (“D-Limit”)⁹ orders. Users¹⁰ submitting CQI enhanced pegged orders¹¹ may select that either CQI 1 or CQI 2 be used to make quote instability determinations for such orders. As described below, CQI 1 and CQI 2 are substantially similar in the amount of time each is “on” (i.e., the System has issued a quote instability determination and treats the quote as unstable) and “off” (i.e., the System has not issued a quote instability determination and treats the quote as stable). Based upon this similarity, as well as the higher usage and incrementally better performance of CQI 2 (as described below), IEX proposes to retire CQI 1, and to have the System always use CQI 2 when making quote instability determinations for any CQI enhanced pegged orders.¹² No changes are proposed for D-Limit orders which will continue to use CQI 2.

Background

CQI 1 utilizes a logistic regression model with multiple coefficients and variables that must exceed a pre-defined threshold in order for the System to make a quote instability calculation. The Exchange has made incremental changes to optimize and enhance the effectiveness of CQI 1 in determining whether a crumbling quote exists three times since Exchange launch, most recently in 2018.¹³ In 2022, the Exchange introduced

⁹ See IEX Rule 11.190(b)(7).

¹⁰ See IEX Rule 1.160(qq).

¹¹ The “CQI enhanced pegged orders” -- pegged orders eligible to exercise price discretion to their discretionary price except during periods of quote instability -- are Discretionary Peg (“D-Peg”), primary peg (“P-Peg”), and Corporate Discretionary Peg (“C-Peg”) orders. See IEX Rules 11.190(b)(8)(K), 11.190(b)(10)(K), and 11.190(b)(16)(K).

¹² This rule change proposal will not affect the functionality of CQI 2.

¹³ See Securities Exchange Act Release 34-78510 (August 9, 2016), 81 FR 54166 (August 15, 2016) (SR-IEX-2016-11); Securities Exchange Act Release No. 80202 (March 10, 2017), 82 FR 14058 (March 16, 2017) (SR-IEX-2017-06); and Securities Exchange Act Release No. 83048 (April 13, 2018), 83 FR 17467 (April 19, 2018) (SR-IEX-2018-07).

CQI 2,¹⁴ which uses a rules-based model rather than a logistic regression model (as for CQI 1) for the quote instability calculation. CQI 2 is designed to provide incrementally more protection to applicable orders by increasing the number of quote instability determinations generated, while maintaining a comparable or better accuracy rate than CQI 1 in predicting the direction and timing of the next price change in the NBB or NBO, as applicable.

CQI 2 became optionally available for CQI enhanced pegged orders on May 16, 2023.¹⁵ and for all D-Limit orders on November 10, 2023.¹⁶ As discussed below, CQI 2 has materially higher usage and provides incrementally more protection than CQI 1.¹⁷

For both D-Peg and P-Peg orders, when the applicable CQI generates a quote instability determination (i.e., it is “on”), the orders do not exercise price discretion to meet the limit price of an active (i.e., taking) order, and remain pegged to a price that is the less aggressive of either (i) one (1) minimum price variant (“MPV”) less aggressive than the primary quote (i.e., one MPV below (above) the NBB (NBO) for buy (sell) orders); or (ii) the order’s limit price (if any).¹⁸ For a C-Peg order, when the applicable CQI is “on,” the order does not exercise price discretion to meet the limit price of an active order, and remains pegged to a price that is either (i) the less aggressive of one (1)

¹⁴ See Securities Exchange Act Release No. 96014 (October 11, 2022), 87 FR 62903 (October 17, 2022) (“CQI 2 Proposal”); Securities Exchange Act Release No. 96416 (December 1, 2022), 87 FR 75099 (December 7, 2022) (“CQI 2 Approval Order”) (SR-IEX-2022-06).

¹⁵ See IEX Trading Alert # 2023-010, available at <https://iextrading.com/alerts/#/217>.

¹⁶ See IEX Trading Alert # 2023-023, available at <https://iextrading.com/alerts/#/231>; see also Securities Exchange Act Release No. 98625 (September 28, 2023), 88 FR 68709 (October 4, 2023) (SR-IEX-2023-10).

¹⁷ Based on data from January 2025.

¹⁸ See IEX Rule 11.190(b)(8) and (10).

MPV less aggressive than the NBB; (ii) the order's limit price (if any); or (iii) the consolidated last sale price.¹⁹

IEX's analysis of market data from January 2025 shows that CQI 2 provides more coverage²⁰ than CQI 1 (65.7% vs. 42.1%) with a higher accuracy rate²¹ than CQI 1 (83.8% vs. 76.6%). While, as noted above, the same market data analysis shows that CQI 1 and CQI 2 are either both "on" or both "off" for 99.90% of Regular Market Hours, and CQI 1 is "on" only 0.009% of the time that CQI 2 is "off." Accordingly, CQI 1 seldom makes a quote instability determination that is not also made by CQI 2. Additionally, for 93% of executed volume for CQI enhanced pegged orders, Users selected CQI 2.

Proposal

Based on the considerable overlap, higher usage, and incrementally more protection provided by CQI 2, IEX proposes to retire CQI 1. Consistent with these factors, IEX believes that this proposed rule change will incrementally improve the protection offered to CQI enhanced pegged orders for which Users are currently selecting CQI 1. IEX also notes that the low demand for CQI 1 does not warrant the technology, infrastructure and ongoing maintenance overhead required to support the product.

Accordingly, IEX proposes to make several changes to IEX Rule 11.190 to implement retirement of CQI 1. Specifically, IEX proposes to make the following changes to IEX Rule 11.190(g):

¹⁹ See IEX Rule 11.190(b)(16)

²⁰ "Coverage" means the percentage of all "adverse" NBBO changes per symbol (lower for bids, higher for offers) that were predicted by the CQI (meaning the CQI was "on" at the time of the adverse NBBO change).

²¹ "Accuracy rate" means the percentage of time that the CQI accurately predicted the direction of the next price change.

- Amend the introductory paragraphs in IEX Rule 11.190(g) as follows:
 - Delete all text in the first introductory paragraph after the introductory phrase “The Exchange utilizes”.
 - Delete the second introductory paragraph, which describes CQI 1.
 - Delete the words “For Option 2, as set forth in subparagraph (2) of Rule 11.190(g), the Exchange utilizes” from the third introductory paragraph.
- Amend IEX Rule 11.190(g)(2) to rename CQI 2 from “Option 2 Crumbling Quote” to “Crumbling Quote.”
- Delete current IEX Rule 11.190(g)(1) and all its subparagraphs, which set forth the functionality of CQI 1.
- Renumber current IEX Rule 11.190(g)(2), which sets forth the functionality for CQI 2, to be IEX Rule 11.190(g)(1).
- Amend current IEX Rule 11.190(g)(2)(B) to reference IEX Rule 11.190(g)(1)(C), instead of the current reference to IEX Rule 11.190(g)(2)(C).
- Amend current IEX Rule 11.190(g)(2)(D)(i) to reference IEX Rule 11.190(g)(1)(A), instead of the current reference to IEX Rule 11.190(g)(2)(A).
- Amend current IEX Rule 11.190(g)(2)(C) to remove the second sentence that reads “All rules are applicable to Option 2.”
- Renumber current IEX Rule 11.190(g)(3) to be IEX Rule 11.190(g)(2).

And IEX proposes to make the following changes to other sections of IEX Rule 11.190

wherever it currently references IEX Rule 11.190(g):

- Amend IEX Rule 11.190(b)(7)(A) and (B) (Discretionary Limit Order) to renumber references to Rule 11.190(g)(2) to now reference IEX Rule 11.190(g)(1).
- Amend IEX Rule 11.190(b)(8) (Primary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”
- Amend IEX Rule 11.190(b)(8)(K)(i) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to

amend the third sentence of the paragraph to read: “The System will restrict a primary peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”

- Amend IEX Rule 11.190(b)(8)(K)(ii) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict a primary peg order from exercising such price discretion even if the current NBO is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(10) (Discretionary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”
- Amend IEX Rule 11.190(b)(10)(K)(i) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(10)(K)(ii) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBO is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(16) (Corporate Discretionary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”
- Amend IEX Rule 11.190(b)(16)(K) to delete the third sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the fourth sentence of the paragraph to read: “The System will restrict the Corporate Discretionary Peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”

Implementation

The Exchange will announce the implementation date of the proposed rule change by Trading Alert at least ten business days in advance of such implementation date and

within 90 days of effectiveness of this proposed rule change.

b. Statutory Basis

IEX believes that the proposed rule change is consistent with Section 6(b)²² of the Act in general, and furthers the objectives of Section 6(b)(5) of the Act,²³ in particular, in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest.

Specifically, IEX believes that retirement of CQI 1 is appropriate to eliminate the technology, infrastructure and ongoing maintenance overhead required to support the product. As discussed in the Purpose section, there is significant overlap between CQI 1 and CQI 2, and CQI 2 has materially higher usage and provides incrementally more protection than CQI 1. Thus, IEX believes that retiring CQI 1 will not materially impact the small subset of Users' orders that currently utilize CQI 1, as those orders will be able to use the similar CQI 2 instead. Accordingly, IEX believes that the proposed rule change is consistent with the protection of investors and the public interest in furtherance of the purposes Act.

IEX also believes the proposed rule change is nondiscriminatory because it will apply equally to all Users that submit a CQI enhanced pegged order to the Exchange.

Finally, the Exchange notes that the proposal to retire CQI 1 does not introduce

²² 15 U.S.C. 78f.

²³ 15 U.S.C. 78f(b)(5).

any new functionality but merely applies the same CQI to all CQI enhanced pegged orders and therefore does not raise any new or novel issues that have not been previously considered by the Commission.

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

IEEX does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With regard to intra-market competition, the proposed change will apply equally to all Members on a fair, impartial and nondiscriminatory basis without imposing any new burdens on the Members. The Commission has already approved the functionality of the Exchange's CQI 2 and its applicability to CQI enhanced order types; the purpose of this filing is simply to retire an infrequently used version of the CQI, as described in the Purpose and Statutory Basis sections, and instead use CQI 2 when making quote instability determinations for all CQI enhanced pegged orders.

With regard to inter-market competition, other exchanges are free to adopt similar quote instability calculations. In this regard, the Exchange notes that that until 2024, NYSE American LLC had adopted a rule copying an earlier iteration of the Exchange's quote instability calculation.²⁴

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

Written comments were neither solicited nor received.

6. Extension of Time Period for Commission Action

²⁴ See Securities Exchange Act Release No. 99827 (March 21, 2024), 89 Fed. Reg. 21302 (March 27, 2024) (SR-NYSEAMER-2024-21) (Filing to retire the quote instability calculation introduced in 2017).

Not applicable.

7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2)

The Exchange has designated this rule filing as non-controversial under Section 19(b)(3)(A) of the Act²⁵ and paragraph (f)(6) of Rule 19b-4 thereunder.²⁶ The Exchange asserts that the proposed rule change: (1) will not significantly affect the protection of investors or the public interest, (2) will not impose any significant burden on competition, (3) and will not become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate if consistent with the protection of investors and the public interest. In addition, the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing.²⁷

The Exchange believes that the proposed rule change meets the criteria of subparagraph (f)(6) of Rule 19b-4.²⁸ because it would not significantly affect the protection of investors or the public interest. Rather, the proposed rule change would retire an infrequently used version of the CQI, as described in the Purpose and Statutory Basis sections, and instead use CQI 2 when making quote instability determinations for all CQI enhanced pegged orders. Based on the limited usage of CQI 1, the Exchange does not believe that its retirement would impose any material burden on Members. Moreover,

²⁵ 15 U.S.C. 78s(b)(3)(A).

²⁶ 17 CFR 240.19b-4(f)(6).

²⁷ 17 CFR 240.19b-4(f)(6)(iii).

²⁸ 17 CFR 240.19b-4(f)(6).

the proposed rule change would not materially change the operation of the Exchange or introduce new functionality, since, as described in the Purpose and Statutory Basis sections, IEX is merely proposing to retire a rarely used version of the CQI while continuing to utilize a Commission approved version. Thus, the Exchange believes that this proposed rule change does not raise any new or novel issues not already considered by the Commission.

Accordingly, the Exchange believes that the proposed rule change is noncontroversial and satisfies the requirements of Rule 19b-4(f)(6).²⁹

Furthermore, Rule 19b-4(f)(6) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

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: (i) necessary or appropriate in the public interest; (ii) for the protection of investors; or (iii) otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

8. Proposed Rule Change Based on the Rules of Another Self-Regulatory Organization or of the Commission

The proposed rule change is not based on the rules of another self-regulatory organization or of the Commission.

²⁹ 17 CFR 240.19b-4(f)(6).

9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

11. Exhibits

Exhibit 1 – Form of Notice of the Proposed Rule Change for Publication in the Federal Register.

Exhibit 5 – Text of Proposed Rule Change.

EXHIBIT 1

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34 - ; File No. SR-IEX-2025-04)

Self-Regulatory Organizations; Investors Exchange LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change to Amend IEX Rule 11.190 to Retire One of the Two Proprietary Mathematical Calculations the Exchange Utilizes to Assess the Probability of an Imminent Change to the Protected Quotation

Pursuant to Section 19(b)(1)¹ of the Securities Exchange Act of 1934 (the “Act”)² and Rule 19b-4 thereunder,³ notice is hereby given that, on (date), the Investors Exchange LLC (“IEX” or the “Exchange”) 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 self-regulatory organization. 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

Pursuant to the provisions of Section 19(b)(1) under the Securities Exchange Act of 1934 (“Act”), and Rule 19b-4 thereunder, Investors Exchange LLC (“IEX” or “Exchange”) is filing with the Securities and Exchange Commission (“Commission”) a proposed rule change to amend IEX Rule 11.190 to retire one of the two proprietary mathematical calculations the Exchange utilizes to assess the probability of an imminent change to the Protected Quotation. Specifically, the Exchange proposes to retire CQI 1 , and references thereto in IEX Rule 11.190, because the

¹ 15 U.S.C. 78s(b)(1).

² 15 U.S.C. 78a.

³ 17 CFR 240.19b-4.

Exchange has determined that CQI 2 provides incrementally more protection, is used more frequently, and there is considerable overlap between the protection provided by both CQIs. The Exchange has designated this proposal as non-controversial and provided the Commission with the notice required by Rule 19b-4(f)(6)(iii) under the Act.

The text of the proposed rule change is available at the Exchange's website at <https://www.iexexchange.io/resources/regulation/rule-filings>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

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

In its filing with the Commission, the self-regulatory organization 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 self-regulatory organization 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 the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange currently uses two proprietary mathematical calculations -- "CQI 1" and "CQI 2" -- to make quote instability determinations for certain order types (i.e., to assess the probability of a "crumbling quote" -- an imminent change to the current Protected NBB⁴ to a lower price or a Protected NBO⁵ to a higher price for a particular security). Each of these calculations is referred to as the "crumbling quote indicator" or "CQI." Currently, CQI 2 is used

⁴ See IEX Rule 1.160(cc).

⁵ See IEX Rule 1.160(cc).

to make quote instability determinations for all Discretionary Limit (“D-Limit”)⁶ orders. Users⁷ submitting CQI enhanced pegged orders⁸ may select that either CQI 1 or CQI 2 be used to make quote instability determinations for such orders. As described below, CQI 1 and CQI 2 are substantially similar in the amount of time each is “on” (i.e., the System has issued a quote instability determination and treats the quote as unstable) and “off” (i.e., the System has not issued a quote instability determination and treats the quote as stable). Based upon this similarity, as well as the higher usage and incrementally better performance of CQI 2 (as described below), IEX proposes to retire CQI 1, and to have the System always use CQI 2 when making quote instability determinations for any CQI enhanced pegged orders.⁹ No changes are proposed for D-Limit orders which will continue to use CQI 2.

Background

CQI 1 utilizes a logistic regression model with multiple coefficients and variables that must exceed a pre-defined threshold in order for the System to make a quote instability calculation. The Exchange has made incremental changes to optimize and enhance the effectiveness of CQI 1 in determining whether a crumbling quote exists three times since Exchange launch, most recently in 2018.¹⁰ In 2022, the Exchange introduced CQI 2,¹¹ which

⁶ See IEX Rule 11.190(b)(7).

⁷ See IEX Rule 1.160(qq).

⁸ The “CQI enhanced pegged orders” -- pegged orders eligible to exercise price discretion to their discretionary price except during periods of quote instability -- are Discretionary Peg (“D-Peg”), primary peg (“P-Peg”), and Corporate Discretionary Peg (“C-Peg”) orders. See IEX Rules 11.190(b)(8)(K), 11.190(b)(10)(K), and 11.190(b)(16)(K).

⁹ This rule change proposal will not affect the functionality of CQI 2.

¹⁰ See Securities Exchange Act Release 34-78510 (August 9, 2016), 81 FR 54166 (August 15, 2016) (SR-IEX-2016-11); Securities Exchange Act Release No. 80202 (March 10, 2017), 82 FR 14058 (March 16, 2017) (SR-IEX-2017-06); and Securities Exchange Act Release No. 83048 (April 13, 2018), 83 FR 17467 (April 19, 2018) (SR-IEX-2018-07).

¹¹ See Securities Exchange Act Release No. 96014 (October 11, 2022), 87 FR 62903 (October 17, 2022) (“CQI 2 Proposal”); Securities Exchange Act Release No. 96416 (December 1, 2022), 87 FR 75099

uses a rules-based model rather than a logistic regression model (as for CQI 1) for the quote instability calculation. CQI 2 is designed to provide incrementally more protection to applicable orders by increasing the number of quote instability determinations generated, while maintaining a comparable or better accuracy rate than CQI 1 in predicting the direction and timing of the next price change in the NBB or NBO, as applicable.

CQI 2 became optionally available for CQI enhanced pegged orders on May 16, 2023.¹² and for all D-Limit orders on November 10, 2023.¹³ As discussed below, CQI 2 has materially higher usage and provides incrementally more protection than CQI 1.¹⁴

For both D-Peg and P-Peg orders, when the applicable CQI generates a quote instability determination (i.e., it is “on”), the orders do not exercise price discretion to meet the limit price of an active (i.e., taking) order, and remain pegged to a price that is the less aggressive of either (i) one (1) minimum price variant (“MPV”) less aggressive than the primary quote (i.e., one MPV below (above) the NBB (NBO) for buy (sell) orders); or (ii) the order’s limit price (if any).¹⁵ For a C-Peg order, when the applicable CQI is “on,” the order does not exercise price discretion to meet the limit price of an active order, and remains pegged to a price that is either (i) the less aggressive of one (1) MPV less aggressive than the NBB; (ii) the order’s limit price (if any); or (iii) the consolidated last sale price.¹⁶

IEX’s analysis of market data from January 2025 shows that CQI 2 provides more

(December 7, 2022) (“CQI 2 Approval Order”) (SR-IEX-2022-06).

¹² See IEX Trading Alert # 2023-010, available at <https://iextrading.com/alerts/#/217>.

¹³ See IEX Trading Alert # 2023-023, available at <https://iextrading.com/alerts/#/231>; see also Securities Exchange Act Release No. 98625 (September 28, 2023), 88 FR 68709 (October 4, 2023) (SR-IEX-2023-10).

¹⁴ Based on data from January 2025.

¹⁵ See IEX Rule 11.190(b)(8) and (10).

¹⁶ See IEX Rule 11.190(b)(16)

coverage¹⁷ than CQI 1 (65.7% vs. 42.1%) with a higher accuracy rate¹⁸ than CQI 1 (83.8% vs. 76.6%). While, as noted above, the same market data analysis shows that CQI 1 and CQI 2 are either both “on” or both “off” for 99.90% of Regular Market Hours, and CQI 1 is “on” only 0.009% of the time that CQI 2 is “off.” Accordingly, CQI 1 seldom makes a quote instability determination that is not also made by CQI 2. Additionally, for 93% of executed volume for CQI enhanced pegged orders, Users selected CQI 2.

Proposal

Based on the considerable overlap, higher usage, and incrementally more protection provided by CQI 2, IEX proposes to retire CQI 1. Consistent with these factors, IEX believes that this proposed rule change will incrementally improve the protection offered to CQI enhanced pegged orders for which Users are currently selecting CQI 1. IEX also notes that the low demand for CQI 1 does not warrant the technology, infrastructure and ongoing maintenance overhead required to support the product.

Accordingly, IEX proposes to make several changes to IEX Rule 11.190 to implement retirement of CQI 1. Specifically, IEX proposes to make the following changes to IEX Rule 11.190(g):

- Amend the introductory paragraphs in IEX Rule 11.190(g) as follows:
 - Delete all text in the first introductory paragraph after the introductory phrase “The Exchange utilizes”.
 - Delete the second introductory paragraph, which describes CQI 1.
 - Delete the words “For Option 2, as set forth in subparagraph (2) of Rule

¹⁷ “Coverage” means the percentage of all “adverse” NBBO changes per symbol (lower for bids, higher for offers) that were predicted by the CQI (meaning the CQI was “on” at the time of the adverse NBBO change).

¹⁸ “Accuracy rate” means the percentage of time that the CQI accurately predicted the direction of the next price change.

11.190(g), the Exchange utilizes” from the third introductory paragraph.

- Amend IEX Rule 11.190(g)(2) to rename CQI 2 from “Option 2 Crumbling Quote” to “Crumbling Quote.”
- Delete current IEX Rule 11.190(g)(1) and all its subparagraphs, which set forth the functionality of CQI 1.
- Renumber current IEX Rule 11.190(g)(2), which sets forth the functionality for CQI 2, to be IEX Rule 11.190(g)(1).
- Amend current IEX Rule 11.190(g)(2)(B) to reference IEX Rule 11.190(g)(1)(C), instead of the current reference to IEX Rule 11.190(g)(2)(C).
- Amend current IEX Rule 11.190(g)(2)(D)(i) to reference IEX Rule 11.190(g)(1)(A), instead of the current reference to IEX Rule 11.190(g)(2)(A).
- Amend current IEX Rule 11.190(g)(2)(C) to remove the second sentence that reads “All rules are applicable to Option 2.”
- Renumber current IEX Rule 11.190(g)(3) to be IEX Rule 11.190(g)(2).

And IEX proposes to make the following changes to other sections of IEX Rule 11.190 wherever it currently references IEX Rule 11.190(g):

- Amend IEX Rule 11.190(b)(7)(A) and (B) (Discretionary Limit Order) to renumber references to Rule 11.190(g)(2) to now reference IEX Rule 11.190(g)(1).
- Amend IEX Rule 11.190(b)(8) (Primary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”
- Amend IEX Rule 11.190(b)(8)(K)(i) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict a primary peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(8)(K)(ii) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict a primary peg order from exercising such price discretion even if the current NBO is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(10) (Discretionary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”

- Amend IEX Rule 11.190(b)(10)(K)(i) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(10)(K)(ii) to delete the second sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the third sentence of the paragraph to read: “The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBO is different than the price upon which the determination was based.”
- Amend IEX Rule 11.190(b)(16) (Corporate Discretionary Peg Order) to remove the reference to paragraph (g)(2) and the words “as selected by the User.”
- Amend IEX Rule 11.190(b)(16)(K) to delete the third sentence of the paragraph that concerns the choice between CQI 1 and CQI 2, and to amend the fourth sentence of the paragraph to read: “The System will restrict the Corporate Discretionary Peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.”

Implementation

The Exchange will announce the implementation date of the proposed rule change by Trading Alert at least ten business days in advance of such implementation date and within 90 days of effectiveness of this proposed rule change.

2. Statutory Basis

IEX believes that the proposed rule change is consistent with Section 6(b)¹⁹ of the Act 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 foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public

¹⁹ 15 U.S.C. 78f.

²⁰ 15 U.S.C. 78f(b)(5).

interest.

Specifically, IEX believes that retirement of CQI 1 is appropriate to eliminate the technology, infrastructure and ongoing maintenance overhead required to support the product. As discussed in the Purpose section, there is significant overlap between CQI 1 and CQI 2, and CQI 2 has materially higher usage and provides incrementally more protection than CQI 1. Thus, IEX believes that retiring CQI 1 will not materially impact the small subset of Users' orders that currently utilize CQI 1, as those orders will be able to use the similar CQI 2 instead. Accordingly, IEX believes that the proposed rule change is consistent with the protection of investors and the public interest in furtherance of the purposes Act.

IEX also believes the proposed rule change is nondiscriminatory because it will apply equally to all Users that submit a CQI enhanced pegged order to the Exchange.

Finally, the Exchange notes that the proposal to retire CQI 1 does not introduce any new functionality but merely applies the same CQI to all CQI enhanced pegged orders and therefore does not raise any new or novel issues that have not been previously considered by the Commission.

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

IEX does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With regard to intra-market competition, the proposed change will apply equally to all Members on a fair, impartial and nondiscriminatory basis without imposing any new burdens on the Members. The Commission has already approved the functionality of the Exchange's CQI 2 and its applicability to CQI enhanced order types; the purpose of this filing is simply to retire an infrequently used version of the CQI, as described in the Purpose and Statutory Basis sections,

and instead use CQI 2 when making quote instability determinations for all CQI enhanced pegged orders.

With regard to inter-market competition, other exchanges are free to adopt similar quote instability calculations. In this regard, the Exchange notes that that until 2024, NYSE American LLC had adopted a rule copying an earlier iteration of the Exchange's quote instability calculation.²¹

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

Written comments were neither solicited nor received.

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

The Exchange has designated this rule filing as non-controversial under Section 19(b)(3)(A)²² of the Act and Rule 19b-4(f)(6)²³ thereunder. Because the proposed rule change does not: (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) 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 Act and Rule 19b-4(f)(6) thereunder.

The Exchange believes that the proposed rule change meets the criteria of subparagraph (f)(6) of Rule 19b-4.²⁴ because it would not significantly affect the protection of investors or the public interest. Rather, the proposed rule change would retire an infrequently used version of the CQI, as described in the Purpose and Statutory Basis sections, and instead use CQI 2 when

²¹ See Securities Exchange Act Release No. 99827 (March 21, 2024), 89 Fed. Reg. 21302 (March 27, 2024) (SR-NYSEAMER-2024-21) (Filing to retire the quote instability calculation introduced in 2017).

²² 15 U.S.C. 78s(b)(3)(A).

²³ 17 CFR 240.19b-4(f)(6).

²⁴ 17 CFR 240.19b-4(f)(6).

making quote instability determinations for all CQI enhanced pegged orders. Based on the limited usage of CQI 1, the Exchange does not believe that its retirement would impose any material burden on Members. Moreover, the proposed rule change would not materially change the operation of the Exchange or introduce new functionality, since, as described in the Purpose and Statutory Basis sections, IEX is merely proposing to retire a rarely used version of the CQI while continuing to utilize a Commission approved version. Thus, the Exchange believes that this proposed rule change does not raise any new or novel issues not already considered by the Commission.

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 shall institute proceedings under Section 19(b)(2)(B)²⁵ of the Act to determine whether the proposed rule change should be approved or 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 (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include file number SR-IEX-2025-04

²⁵ 15 U.S.C. 78s(b)(2)(B).

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-IEX-2025-04. 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 will also 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-IEX-2025-04 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.²⁶

Sherry R. Haywood,

Assistant Secretary.

²⁶ 17 CFR 200.30-3(a)(12).

Exhibit 5 – Text of Proposed Rule Change

Proposed new language is underlined; proposed deletions are in [brackets].

INVESTORS EXCHANGE RULE BOOK

CHAPTER 11. TRADING RULES

Rule 11.190. Orders and Modifiers

Users may enter into the System the types of orders listed in this IEX Rule 11.190, subject to the limitations set forth in this IEX Rule or elsewhere in the IEX Rules. Order, modifier, and parameter combinations which are disallowed by the Exchange may be rejected, ignored, or overridden by the Exchange, as determined by the Exchange to facilitate the most orderly handling of User instructions.

- (a) No change.
- (b) Order Parameters.
 - (1)-(6) No change.
 - (7) Discretionary Limit Order. A displayed, nondisplayed, or partially displayed Limit order that upon entry and when posting to the Order Book, is priced to be equal to and ranked at the order's limit price, except under the following circumstances:
 - (A) Upon entry during periods of quote instability, as defined in Rule 11.190(g)(1[2]), if a Discretionary Limit buy order has a limit price equal to or higher than the quote instability determination price level in effect, the price of the order will be automatically adjusted by the System to one (1) MPV lower than the quote instability determination price level in effect.
 - (B) Upon entry during periods of quote instability, as defined in Rule 11.190(g)(1[2]), if a Discretionary Limit sell order has a limit price equal to or lower than the quote instability determination price level in effect, the price of the order will be automatically adjusted by the System to one (1) MPV higher than the quote instability determination price level in effect.
 - (C)-(F) No change.

- (8) Primary Peg Order. A pegged order that upon entry and when posting to the Order Book, the price of the order is automatically adjusted by the System to be equal to and ranked at the less aggressive of one (1) MPV less aggressive than the primary quote (i.e. the NBB for buy orders and NBO for sell orders) or the order's limit price, if any. While resting on the Order Book, the order is automatically adjusted by the System in response to the changes in the NBB (NBO) for buy (sell) orders up (down) to the order's limit price, if any. In order to meet the limit price of active orders on the Order Book, a primary peg order will exercise price discretion to its discretionary price (defined as the primary quote), except during periods of quote instability as defined by paragraph (g)(1)[or (g)(2)] below[, as selected by the User,] or where the primary peg order is resting at its limit price, if any. When exercising price discretion, a primary peg order maintains time priority at its resting price and is prioritized behind any non-displayed interest resting at the discretionary price for the duration of that book processing action. If multiple primary peg orders are exercising price discretion during the same book processing action, they maintain their relative time priority at the discretionary price. A primary peg order:

(A)-(J) No change.

- (K) Is eligible to exercise price discretion to its discretionary price, except during periods of quote instability, as specified in paragraph (g) below.
- (i) If the System determines the NBB for a particular security to be an unstable quote in accordance with paragraph (g) below, it will restrict buy primary peg orders in that security from exercising price discretion to trade against interest at the NBB. [If the User selected the quote instability determination set forth in paragraph (g)(1) below, the System will restrict the primary peg order from exercising such price discretion if the current NBB is the same as the NBB upon which the determination was based. If the User selected the quote instability determination set forth in paragraph (g)(2) below, the]The System will restrict a primary peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.
 - (ii) If the System determines the NBO for a particular security to be an unstable quote in accordance with paragraph (g) below, it will restrict sell primary peg orders in that security from exercising price discretion to trade against interest at the NBO. [If the User selected the quote instability determination set forth in paragraph (g)(1) below, the System will restrict the primary peg order from exercising such price discretion if the current NBO is the same as the NBO upon which the determination was based. If the User selected the quote instability determination set forth in paragraph (g)(2) below, the]The System will restrict a primary peg order from exercising such price discretion even

if the current NBO is different than the price upon which the determination was based.

(9) No change.

(10) Discretionary Peg Order. A pegged order that upon entry into the System, the price of the order is automatically adjusted by the System to be equal to the less aggressive of the Midpoint Price or the order's limit price, if any. When unexecuted shares of such order are posted to the Order Book, the price of the order is automatically adjusted by the System to be equal to and ranked at the less aggressive of one (1) MPV less aggressive than the primary quote (i.e., the NBB for buy orders and NBO for sell orders) or the order's limit price and is automatically adjusted by the System in response to changes in the NBB (NBO) for buy (sell) orders up (down) to the order's limit price, if any. In order to meet the limit price of active orders on the Order Book, a Discretionary Peg order will exercise the least amount of price discretion necessary from the Discretionary Peg order's resting price to its discretionary price (defined as the less aggressive of the Midpoint Price or the Discretionary Peg order's limit price, if any, or as set forth in IEX Rule 11.190(h)(2)(B)), except during periods of quote instability as defined in paragraph (g)(1)[or (g)(2)]below[, as selected by the User,]when a Discretionary Peg order is only eligible to trade at its resting price. When exercising price discretion, a Discretionary Peg order maintains time priority at its resting price and is prioritized behind any non-displayed interest at the discretionary price for the duration of that book processing action. If multiple Discretionary Peg orders are exercising price discretion during the same book processing action, they maintain their relative time priority at the discretionary price. A Discretionary Peg order:

(A)-(J) No change.

(K) Is eligible to exercise price discretion to its discretionary price, except during periods of quote instability, as specified in paragraph (g) below.

(i) If the System determines the NBB for a particular security to be an unstable quote in accordance with paragraph (g), it will restrict buy Discretionary Peg orders in that security from exercising price discretion to trade against interest at or above the NBB. [If the User selected the quote instability determination set forth in paragraph (g)(1) below, the System will restrict the Discretionary Peg order from exercising such price discretion if the current NBB is the same as the NBB upon which the determination was based. If the User selected the quote instability determination set forth in paragraph (g)(2) below, the]The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBB is different than the price upon which the determination was based.

(ii) If the System determines the NBO for a particular security to be an unstable quote in accordance with paragraph (g), it will restrict sell Discretionary Peg orders in that security from exercising price discretion to trade against interest at or below the NBO. [If the User

selected the quote instability determination set forth in paragraph (g)(1) below, the System will restrict the Discretionary Peg order from exercising such price discretion if the current NBO is the same as the NBO upon which the determination was based. If the User selected the quote instability determination set forth in paragraph (g)(2) below, the] The System will restrict the Discretionary Peg order from exercising such price discretion even if the current NBO is different than the price upon which the determination was based.

(11)-(15) No change.

(16) Corporate Discretionary Peg Order. A Discretionary Peg buy order that upon entry into the System, the price of the order is automatically adjusted by the System to be equal to the less aggressive of the Midpoint Price, the consolidated last sale price, or the order's limit price, if any. When unexecuted shares of such order are posted to the Order Book, the price of the order is automatically adjusted by the System to be equal to and ranked at the less aggressive of one (1) MPV less than the NBB, the consolidated last sale price, or the order's limit price and is automatically adjusted by the System in response to changes in the NBB and consolidated last sale price up to the order's limit price, if any (the order's "resting price"). In order to meet the limit price of active orders on the Order Book, a Corporate Discretionary Peg order will exercise the least amount of price discretion necessary from the order's resting price to its discretionary price (defined as the less aggressive of the Midpoint Price, consolidated last sale price, or the order's limit price, if any, or as set forth in IEX Rule 11.190(h)(2)(B)), except during periods of quote instability as defined in paragraph (g)(1)[or (g)(2)] below[, as selected by the User,] when a Corporate Discretionary Peg order is only eligible to trade at its resting price. When exercising price discretion, a Corporate Discretionary Peg order maintains time priority at its resting price and is prioritized behind any non-displayed interest at the discretionary price for the duration of that book processing action. If multiple Corporate Discretionary Peg orders are exercising price discretion during the same book processing action, they maintain their relative time priority at the discretionary price. A Corporate Discretionary Peg order:

(A)-(J) No change.

(K) Is eligible to exercise price discretion to its discretionary price, except during periods of quote instability, as specified in paragraph (g) below. If the System determines the NBB for a particular security to be an unstable quote in accordance with paragraph (g), it will restrict Corporate Discretionary Peg orders in that security from exercising price discretion to trade against interest at or above the NBB. [If the User selected the quote instability determination set forth in paragraph (g)(1) below, the System will restrict the Corporate Discretionary Peg order from exercising such price discretion if the current NBB is the same as the NBB upon which the determination was based. If the User selected the quote instability determination set forth in paragraph (g)(2) below, the] The System will restrict the Corporate Discretionary Peg order from

exercising such price discretion even if the current NBB is different than the price upon which the determination was based.

(17)-(21) No Change.

(c)-(f) No change.

(g) Quote Stability.

The Exchange utilizes [two User selected alternative proprietary mathematical calculations to assess the probability of an imminent change to the current Protected NBB to a lower price or a Protected NBO to a higher price for a particular security.

For Option 1, as set forth in this subparagraph (1) of Rule 11.190(g), the Exchange utilizes real time relative quoting activity of Protected Quotations and a proprietary mathematical calculation (the “quote instability calculation”) to assess the probability of an imminent change to the current Protected NBB to a lower price or Protected NBO to a higher price for a particular security (“quote instability factor”). When the quoting activity meets predefined criteria and the quote instability factor calculated is greater than the Exchange’s defined threshold (“quote instability threshold”), the System treats the quote as not stable (“quote instability” or a “crumbling quote”). During all other times, the quote is considered stable (“quote stability”). The System independently assesses the stability of the Protected NBB and Protected NBO for each security. References in paragraph (g)(1) of this Rule to “Protected Quotations”, “Protected NBB”, “Protected NBO” and “Protected NBBO” herein include quotations from the following exchanges: XNYS, ARCX, XNGS, XBOS, BATS, BATY, EDGX, EDGA.

For Option 2, as set forth in this subparagraph (2) of Rule 11.190(g), the Exchange utilizes] real time relative quoting activity of Protected Quotations from eleven exchanges (ARCX, BATY, BATS, EDGA, EDGX, EPRL, MEMX, XBOS, XNGS, XNYS, XPHL) referred to as “Signal Exchanges” and nine proprietary mathematical calculations (“the Quote Instability Rules”) which each independently assess the probability of an imminent change to the current Protected NBB to a lower price or Protected NBO to a higher price for a particular security. When the quoting activity meets one or more Quote Instability Rule’s predefined criteria and that Quote Instability Rule’s current activation value pursuant to [subparagraph (2) of]this IEX Rule 11.190(g) (“Activation Value”) is greater than the Exchange’s defined threshold (“Activation Threshold”) for that Quote Instability Rule, the System treats the quote as not stable (“quote instability” or a “crumbling quote”). For each Quote Instability Rule, the Activation Value is initialized at 0.5 at the start of the Regular Session and updated during regular market hours as described in [subparagraph (2) of]this IEX Rule 11.190(g). During all other times, the quote is considered stable (“quote stability”).

(1) Option 1 Crumbling Quote. When the System determines that either the Protected NBB or the Protected NBO in a particular security is unstable, the determination remains in effect at that price level for two (2) milliseconds, unless a new determination is made before the end of the two (2) millisecond period. Only one determination may be in effect at any given time for a particular security. A new determination may be made after at least 200 microseconds has elapsed since a preceding determination, or a price change on either side of the Protected NBBO occurs, whichever is first. If a new determination is made, the original determination is no longer in effect. A new determination can be at either the Protected NBB or the

Protected NBO and at the same or different price level as the original determination. Quote instability or a crumbling quote is determined by the System when:

- (A) Pursuant to the quote instability calculation, the quote instability factor is greater than the defined quote instability threshold.
- (i) Quote Instability Factor. The Exchange's proprietary quote instability calculation used to determine the current quote instability factor is defined by the following formula that utilizes the quote stability coefficients and quote stability variables defined below:

$$1 / (1 + e^{-(C0 + C1 * N + C2 * F + C3 * NC + C4 * FC + C5 * EPos + C6 * ENeg + C7 * EPosPrev + C8 * ENegPrev + C9 * Delta)})$$

- (a) Quote Stability Coefficients. The Exchange utilizes the values below for the quote stability coefficients.

(1) $C0 = -1.7561$

(2) $C1 = -0.7335$

(3) $C2 = -0.0047$

(4) $C3 = -0.3567$

(5) $C4 = 0.2407$

(6) $C5 = -0.0891$

(7) $C6 = 0.4360$

(8) $C7 = 0.0405$

(9) $C8 = -0.0447$

(10) $C9 = 0.8769$

- (b) Quote Stability Variables. The Exchange utilizes the quote stability variables defined below to calculate the current quote instability factor.

(1) N = the number of Protected Quotations on the near side of the market, i.e. Protected NBB for buy orders and Protected NBO for sell orders.

(2) F = the number of Protected Quotations on the far side of the market, i.e. Protected NBO for buy orders and Protected NBB for sell orders.

(3) NC = the number of Protected Quotations on the near side of the market minus the maximum number of Protected Quotations on the near side at any point since one (1) millisecond ago or the most recent PBBO change on the near side, whichever happened more recently.

- (4) FC = the number of Protected Quotations on the far side of the market minus the minimum number of Protected Quotations on the far side at any point since one (1) millisecond ago or the most recent PBBO change on the far side, whichever happened more recently.
 - (5) EPos = a Boolean indicator that equals 1 if the most recent quotation update was a quotation of a protected market joining the near side of the market at the same price.
 - (6) ENeg = a Boolean indicator that equals 1 if the most recent quotation update was a quotation of a protected market moving away from the near side of market that was previously at the same price.
 - (7) EPosPrev = a Boolean indicator that equals 1 if the second most recent quotation update was a quotation of a protected market joining the near side of the market at the same price AND the second most recent quotation update occurred since one (1) millisecond ago or the most recent PBBO change on the near side, whichever happened more recently.
 - (8) ENegPrev = a Boolean indicator that equals 1 if the second most recent quotation update was a quotation of a protected market moving away from the near side of market that was previously at the same price AND the second most recent quotation update occurred since one (1) millisecond ago or the most recent PBBO change on the near side, whichever happened more recently.
 - (9) Delta = the number of these three (3) venues that moved away from the near side of the market on the same side of the market and were at the same price at any point since one (1) millisecond ago or the most recent PBBO change on the near side, whichever happened more recently: XNGS, EDGX, BATS.
- (ii) Quote Instability Threshold. The Exchange utilizes a quote instability threshold of 0.19 for securities whose current spread is less than or equal to \$0.01; 0.27 for securities for which the current spread (i.e., the Protected Best Offer minus Protected Best Bid) is greater than \$0.01 and less than or equal to \$0.02; 0.28 for securities for which the current spread is greater than \$0.02 and less than or equal to \$0.03; and 0.30 for securities for which the current spread is greater than \$0.03.]
- (1[2]) [Option 2]Crumbing Quote. When the System determines that either the Protected NBB or the Protected NBO in a particular security is unstable, the determination remains in effect at that price level for two (2) milliseconds (a “Quote Instability Determination”). Quote

Instability Determinations are made separately for the Protected NBB and Protected NBO, so it is possible for zero, one or both of the Protected NBB and Protected NBO to be subject to a quote instability determination concurrently. A new Quote Instability Determination may be made after at least 250 microseconds has elapsed since a preceding Quote Instability Determination on the same side of the market in a particular security (i.e., Protected NBB or Protected NBO). If a new Quote Instability Determination is made, the Quote Instability Determination will be extended and in effect until two (2) milliseconds after the new Quote Instability Determination. Quote instability is determined by the System when:

- (A) The conditions set forth in one or more of the Quote Instability Rules are met and that Quote Instability Rule's current Activation Value is greater than its Activation Threshold.
- (B) Quote Stability Variables. The Exchange uses the quote stability variables defined below to calculate whether the conditions set forth in each Quote Instability Rule set forth in subparagraph (1[2])(C) of this IEX Rule 11.190(g) are met.
 - (i)-(xx) No Change.
- (C) Quote Instability Rules. The four (4) categories of rules designed to predict whether the Protected NBB (NBO) is unstable are set forth below. [All rules are applicable to Option 2.]A determination that the Protected NBB for a particular security is unstable does not impact the System's ability to determine that the Protected NBO for that same security is also unstable, and vice versa.
 - (i)-(iv) No Change.
- (D) Activation Value.
 - (i) Whenever the conditions set forth in a Quote Instability Rule are met, the Exchange's proprietary quote instability calculation determines its new Activation Value by multiplying its current Activation Value by the decay factor. The Exchange utilizes an Activation Value of 0.5 at the start of the Regular Market Session and a constant decay factor of 0.94. If the new Activation Value is above the Activation Threshold for the applicable Quote Instability Rule, the System will generate a Quote Instability Determination in accordance with subparagraph (1[2])(A) of this IEX Rule 11.190(g).
 - (a) No change.
 - (ii) No change.
- (2[3]) The Exchange reserves the right to modify the proprietary mathematical calculations used to assess the probability of an imminent change to the current Protected NBB to a lower price or a Protected NBO to a higher price for a particular security, subject to a filing of a proposed rule change with the SEC.
