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

File No. * SR 2023 - * 10

Amendment No. (req. for Amendments *)

Filing by Investors' Exchange LLC

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

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)	Submit with link to Prefiling or Request for Waiver option
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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 Rules 11.190(b)(7) and 11.190(g)

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 * Last Name *

Title *

E-mail *

Telephone * 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 (Title *)

By
(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: 2023.09.26 18:04:02 -04'00'

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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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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D-Limit v6 Ex. 1 for 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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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 Rules 11.190(b)(7) and 11.190(g) to modify the quote instability calculation used for Discretionary Limit orders. 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.³

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.

(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.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ 17 CFR 240.19b-4(f)(6)(iii).

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
917-509-9001

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 purpose of the proposed rule change is to amend IEX Rules 11.190(b)(7) and 11.190(g) to change which proprietary mathematical calculation is used to make quote instability determinations for Discretionary Limit (“D-Limit”)⁴ orders (i.e., 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, also referred to as the “crumbling quote indicator” or “CQI”).⁵ Currently, IEX supports two versions of the CQI – Option 1 Crumbling Quote⁶ (which is based on the CQI in effect when IEX began operating as a national securities exchange in 2016) (“CQI 1”) and Option 2 Crumbling Quote⁷ (which was recently adopted⁸) (“CQI 2”). Users⁹ submitting the following types

⁴ See IEX Rule 11.190(b)(7).

⁵ A D-Limit order may be a displayed or non-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, but will be adjusted to a less-aggressive price during periods of quote instability, as defined in IEX Rule 11.190(g).

⁶ See IEX Rule 11.190(g)(1).

⁷ See IEX Rule 11.190(g)(2).

⁸ 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).

⁹ See IEX Rule 1.160(qq).

of pegged orders -- Discretionary Peg (“D-Peg”)¹⁰ orders, primary peg (“P-Peg”)¹¹ orders, and Corporate Discretionary Peg (“C-Peg”)¹² orders (collectively “CQI-enhanced pegged orders”) – have the option of selecting either CQI 1 or CQI 2 to make quote instability determinations. CQI 1 is used to make quote instability determinations for D-Limit orders.

IEX proposes to utilize CQI 2, instead of CQI 1, to make quote instability determinations for D-Limit orders, based on its superior performance as described herein.

Background

D-Limit orders are designed to protect liquidity providers from potential adverse selection by latency arbitrage trading strategies in a fair and nondiscriminatory manner.¹³ A D-Limit order may be a displayed or non-displayed limit order that upon entry and when posting to the Order Book¹⁴ is priced to be equal to and ranked at the order’s limit price, but will be adjusted to a less-aggressive price during periods of quote instability, as defined in IEX Rule 11.190(g).¹⁵

Specifically, if the System¹⁶ receives a D-Limit buy (sell) order during a period of quote instability (i.e., when a quote instability determination is in effect and the CQI is

¹⁰ See Rule 11.190(b)(10).

¹¹ See Rule 11.190(b)(8).

¹² See Rule 11.190(b)(16). Note that C-Peg orders can only be buy orders, so any discussion of D-Peg sell orders does not apply to C-Peg orders.

¹³ See Securities Exchange Act Release No. 87814 (December 20, 2019), 84 FR 71997, 71998 (December 30, 2019) (SR-IEX-2019-15) (“D-Limit Proposal”); see also Securities Exchange Act Release No. 89686 (August 26, 2020), 85 FR 54438 (September 1, 2020) (SR-IEX-2019-15) (“D-Limit Approval Order”).

¹⁴ See IEX Rule 1.160(p).

¹⁵ See IEX Rules 11.190(b)(7)(A) and (B) and 11.190(g)(1).

¹⁶ See Rule 1.160(nn).

“on”), and the D-Limit order has a limit price equal to or higher (lower) than the quote instability determination price level (“CQI Price”), the price of the order will be automatically adjusted by the System to one (1) MPV¹⁷ lower (higher) than the CQI Price (the “effective limit price”). Similarly, when unexecuted shares of a D-Limit buy (sell) order are posted to the Order Book, if a quote instability determination is made and such shares are ranked and displayed (in the case of a displayed order) by the System at a price equal to or higher (lower) than the CQI Price, the price of the order will be automatically adjusted by the System to a price one MPV lower (higher) than the quote instability price level.¹⁸

Once the price of a D-Limit order that has been posted to the Order Book is automatically adjusted by the System, the order will continue to be ranked and displayed (in the case of a displayed order) at the adjusted price, unless subject to another automatic adjustment, if the order is subject to the price sliding provisions of IEX Rule 11.190(h), or if the User elects that the order will be re-priced if resting at a price that is less aggressive than the NBB (for a buy order) or NBO (for a sell order) ten (10) milliseconds after the most recent quote instability determination pursuant to IEX Rule 11.190(b)(7)(E)(i). Otherwise, a D-Limit order operates in the same manner as either a displayed or non-displayed limit order, as applicable.¹⁹

Since the launch of the D-Limit order type in October 2020, IEX has regularly assessed its performance. This assessment substantiates that D-Limit orders experience

¹⁷ See IEX Rule 11.210.

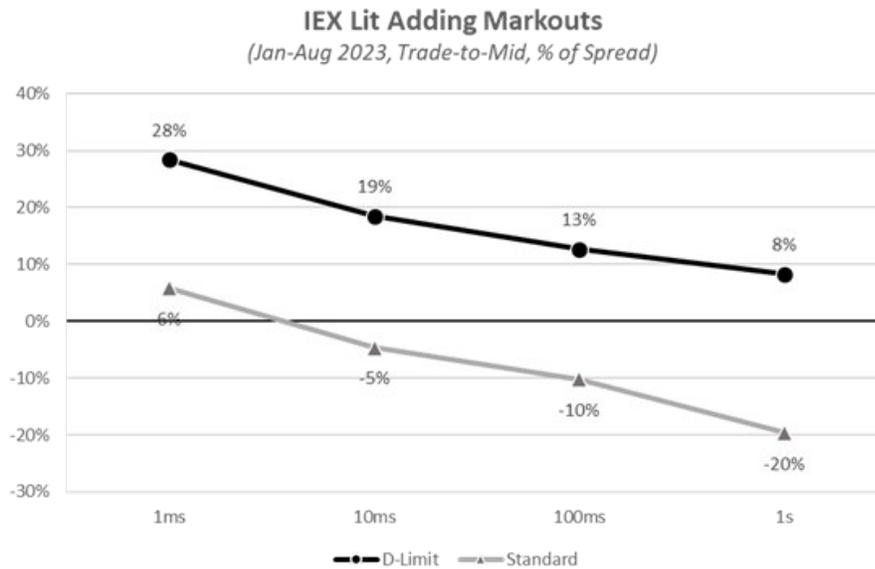
¹⁸ See IEX Rule 11.190(b)(7)(C) and (D).

¹⁹ See IEX Rule 11.190(b)(7).

enhanced protection (as compared to regular limit orders) from unfavorable executions at prices that the Exchange's probabilistic CQI model predicts are about to become "stale." In the rule filing proposing to adopt the D-Limit order type, IEX noted that approximately 25% of displayed volume occurred when the CQI was on, in aggregate resulting in less favorable markouts²⁰ for such executions than when CQI was off. This remains the case for displayed volume from regular limit orders that trade during periods of quote instability. The D-Limit order type was designed to solve for this issue and has been successful in this regard. Since its launch, less than 1% of displayed volume from D-Limit orders occurs when the CQI is on.²¹ As a result, users of displayed D-Limit orders experience substantially more favorable markouts than users of regular displayed limit orders, as shown in the chart below:

²⁰ Markouts measure the direction and degree to which the market moved after an execution, and are often measured as the difference between the execution price and the midpoint of the NBBO at various time intervals after a trade. Markouts are typically used as a way to measure the "quality" of a trade. In particular, short-term markouts of several milliseconds after the time of execution, are often used to assess whether an order was subject to "adverse selection" that can occur when a liquidity providing order is executed at a price that was about to become stale as a result of certain speed-based trading strategies.

²¹ These executions occur when D-Limit buy (sell) orders are adjusted 1 MPV lower (higher) than the CQI Price but are still executed against an Intermarket Sweep Order (ISO), which accesses multiple price levels at a time, therefore accessing the D-Limit order at its new, more passive, price.



Overview of CQI models

As noted above, IEX supports two versions of the CQI. Currently, D-Limit orders utilize the CQI 1 version of the CQI for making quote instability determinations. In determining whether a crumbling quote exists, CQI 1 utilizes real time relative quoting activity of eight exchanges' Protected Quotations²² and a proprietary mathematical calculation (the "quote instability calculation") to assess the probability of an imminent change to the current Protected NBB²³ to a lower price or Protected NBO²⁴ to a higher price for a particular security ("quote instability factor") during the Regular Market

²² Each exchange's Protected Quotation is its best displayed bid or offer. See Rule 1.160(bb). Current Rule 11.190(g) uses the following eight exchanges' Protected Quotations: New York Stock Exchange LLC ("XNYS"), the Nasdaq Stock Market LLC ("XNGS"), NYSE Arca, Inc. ("ARCX"), Nasdaq BX, Inc. ("XBOS"), Cboe BYX Exchange, Inc. ("BATY"), Cboe Bats BZX Exchange, Inc. ("BATS"), Cboe EDGA Exchange, Inc. ("EDGA"), and Cboe EDGX Exchange, Inc. ("EDGX").

²³ See Rule 1.160(cc).

²⁴ See Rule 1.160(cc).

Session²⁵. When the quoting activity meets the predefined objective conditions specified in IEX Rule 11.190(g)(1) and the quote instability factor calculated is greater than the Exchange's defined threshold ("quote instability threshold"), the System treats the NBB or NBO as not stable ("quote instability" or a "crumbling quote"), which turns the CQI on at that CQI Price. During all other times, the quote is considered stable ("quote stability") and the CQI is off. The System independently assesses the stability of the Protected NBB and Protected NBO for each security.²⁶

When CQI 1 is on, it remains in effect at the CQI Price for two milliseconds, unless a new determination is made before the CQI turns off. Only one determination may be in effect at any given time for a particular security (i.e., the System will only treat one side of the Protected NBBO as unstable in a particular security at any given time and the CQI can only be on at one price level).²⁷ A new determination may be made after at least 200 microseconds have elapsed since the preceding determination, or a price change on either side of the best displayed bid or offer of the eight exchanges used for the current quote instability calculation occurs, whichever is first. If a new determination is made, the original determination is no longer in effect. A new determination can be on either side of the best displayed bid or offer of the eight exchanges used for the current quote instability calculation and at the same or different price level as the original

²⁵ See IEX Rule 1.160(gg). Quote instability assessments are only made by the Exchange System during the Regular Market Session because the order types that utilize the assessment, such as D-Limit, are only eligible to trade during the Regular Market Session.

²⁶ The quote stability variables, fixed coefficients and formula were developed by the Exchange based on extensive research, analysis and validation to identify when there is a heightened probability of an imminent quote change to the NBB or NBO.

²⁷ See IEX Rule 11.190(g)(1).

determination.

CQI 2 was adopted in 2022²⁸ as an alternative for CQI-enhanced pegged orders, and is designed to incrementally increase the coverage²⁹ of the quote instability calculation in predicting whether a particular quote is unstable by adjusting the logic underlying the quote instability calculation and introducing enhanced functionality designed to increase the number of crumbling quotes identified, while maintaining the quote instability calculation's accuracy rate³⁰ in predicting the direction and timing of the next price change in the NBB or NBO, as applicable.

As described above, 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 treat the quote as unstable. CQI 2, by contrast, utilizes a quote instability calculation in which nine separate rules -- each with specific conditions based on either the price, size, or price and size of the Signal Exchanges'³¹ Protected Quotations -- can trigger a quote instability determination for either the NBB or the NBO of a particular security.³² Specifically, CQI 2 expands the sources and types of market data used, utilizes a more plain English rules-based approach, modifies the minimum time period between

²⁸ See supra note 8. The Commission received no comments on IEX's proposed rule change to adopt CQI 2.

²⁹ "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).

³⁰ "Accuracy rate" means the percentage of time that the CQI accurately predicted the direction of the next price change (even if it was more than two milliseconds after the quote instability determination).

³¹ For CQI 2, the Signal Exchanges include the eight exchanges used in CQI 1, with the addition of MIAX PEARL, LLC ("EPRL"), MEMX LLC ("MEMX"), and Nasdaq PHLX LLC ("XPHL").

³² See supra note 8.

quote instability determinations, and includes activation thresholds to enable real-time accuracy assessment of each rule with the effect of deactivating a rule that is not meeting specified metrics.³³ In addition, CQI-enhanced pegged orders are restricted from exercising price discretion when the CQI is on, regardless of whether the current NBB or NBO (as applicable) is the same as the CQI Price.

The CQI 2 quote instability rules include four categories of Protected Quotation changes (each comprised of one or more rules) as follows:

- Disappearing bids (or offers) – This category includes four rules that focus on whether one or more of the Signal Exchanges is no longer disseminating a bid or offer at the Signal Best Bid³⁴ or Signal Best Offer³⁵ as applicable;³⁶
- Recent changes in quote size – This category includes two rules that focus on whether there is an imbalance in the size of bids and offers at the Signal Best Bid or Signal Best Offer;
- Locked or crossed market – This category includes one rule that focuses on situations where the Signal Best Bid and Signal Best Offer are locked or crossed; and
- Quotation Changes – This category includes two rules that focus on changes

³³ See supra note 8.

³⁴ “Signal Best Bid” means the highest Protected Bid of the Signal Exchanges. See proposed IEX Rule 11.190(g)(2)(B)(i).

³⁵ “Signal Best Offer” means the lowest Protected Offer of the Signal Exchanges. See proposed IEX Rule 11.190(g)(2)(B)(v).

³⁶ The disappearing bid/offers rules are closely related to the Option 1 Crumbling Quote approach to the quote instability calculation, in that both approaches share the Delta quote instability variable, which is heavily weighted in the current quote instability calculation. See the Option 2 Crumbling Quote Proposal, supra note 8.

to the Signal Best Bid or Signal Best Offer.

On a security-by-security basis, if the specified conditions of any of the quote instability rules are met, then the rule is deemed to be True for that security. A rule must also be active (in addition to True) before it can trigger a quote instability determination. When one or more quote instability rules is deemed to be True and any of such rules are active, the System will trigger a quote instability determination and treat the quote as unstable. This approach is designed to enable broader coverage while controlling for overall accuracy of the quote instability determinations by providing a mechanism to turn off a particular rule when market conditions are such that it is relatively less accurate in predicting a crumbling quote. Based upon market data analysis, IEX believes that utilizing activation thresholds is a useful innovation because it enables the use of rules that can be highly predictive in certain market conditions but not in others.

CQI 2 also differs from CQI 1 with respect to three different time and direction constraints, which are designed to provide a more dynamic methodology for quote instability determinations, thereby incrementally increasing the coverage of the formula in predicting a crumbling quote by expanding the scope of the model to additional situations where the Exchange's probabilistic model predicts that the NBB or NBO is in the process of moving to a less aggressive price and is about to become stale.

First, for CQI 2, the quote instability calculation can turn on concurrently on both sides of the market (i.e., the NBB and NBO) and always remains on for the full two millisecond period each time it turns on. In CQI 1, the quote instability calculation independently assesses the stability of the Protected NBB and Protected NBO for each security, but it can only turn on for one side of the market for each security at a time.

Second, when CQI 2 turns on, it is not constrained to a specific price level, as compared to CQI 1 which turns on at a specific CQI Price. Thus, if the NBB or NBO (as applicable) changes during the time CQI 1 is on, CQI-enhanced pegged orders (that have elected CQI 1) are not constrained from exercising discretion since the CQI Price is no longer equal to the current NBB or NBO (as applicable).³⁷ In contrast, for CQI-enhanced pegged orders (that have elected CQI 2), the CQI continues to turn on at a specific price (the quote instability determination price level), but CQI-enhanced pegged orders are constrained from exercising discretion past their resting price when the CQI is on for the same side of the market as such orders regardless of whether the price at which it turned on is currently equal to the NBB or NBO (as applicable). Third, for CQI 2, the System can make a new quote instability determination 250 microseconds after a prior determination, rather than 200 microseconds for CQI 1.

IEX introduced CQI 2 into its System on March 31, 2023 (i.e., it began generating quote instability determinations for informational and planning purposes) and it became available for CQI-enhanced pegged orders on May 16, 2023.³⁸ Consistent with the Exchange's market data analysis prior to proposing CQI 2, data analysis for April through July of 2023 substantiates that CQI 2 provides incrementally more protection (i.e., increased coverage and accuracy) than CQI 1 while still being "on" for only several seconds a day per symbol, as set forth in the chart below:

³⁷ See IEX Rules 11.190(b)(8)(K)(i) and (ii), (b)(10)(K)(i) and (ii), (b)(16)(K).

³⁸ See IEX Trading Alert # 2023-008, available at <https://iextrading.com/alerts/#/215>.

<u>Metric</u>	<u>CQI 1</u>	<u>CQI 2</u>
Average time on ^a (average of all symbols)	1.9 seconds	3.1 seconds
Average time on (volume weighted)	18.0 seconds	32.1 seconds
Coverage (volume weighted) ^b	46.9%	63.2%
Accuracy Rate (volume weighted) ^c	78%	80%
% of the Day CQI is “On” (volume-weighted)	0.077%	0.137%
% of the day D-Limit is available at specified limit price	99.923%	99.863%

^a “Time on” means the average time the CQI is on during a day per symbol.

^b See supra note 29.

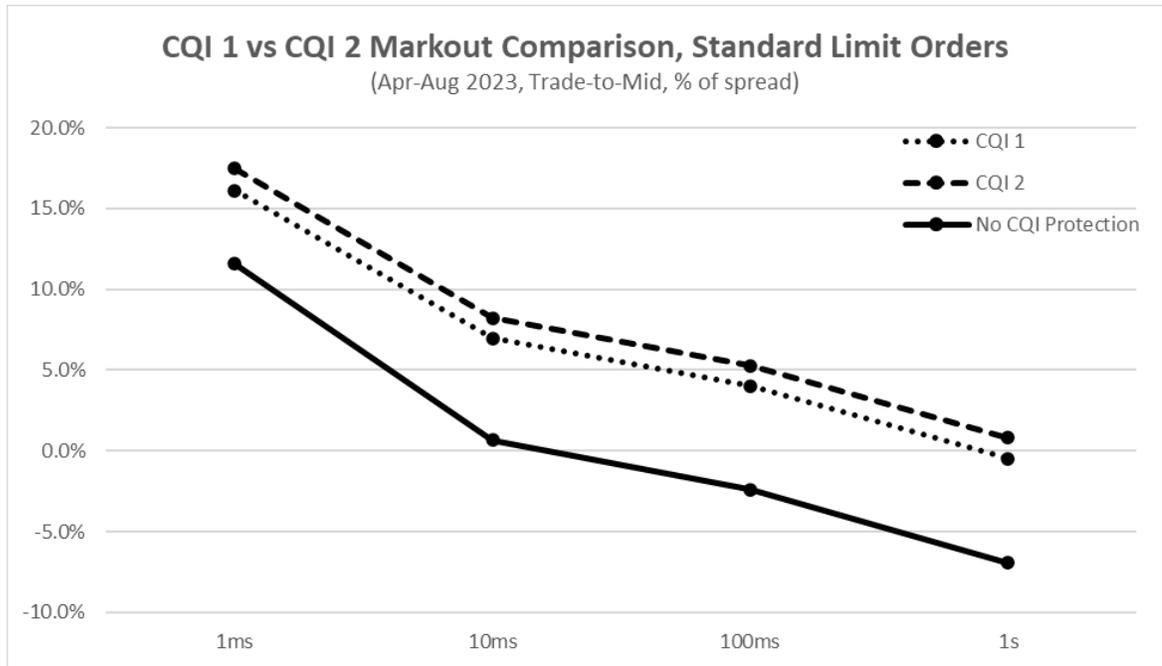
^c “Accuracy” means the percent of time that following the CQI being “on” the NBB or NBO (as applicable) moves in the predicted direction on the next price change.

Proposal

Based on its assessment (as described above) that CQI 2 provides incrementally greater coverage and accuracy in predicting a crumbling quote than CQI 1, IEX proposes to amend IEX Rules 11.190(b)(7) and 11.190(g)(2) to provide that quote instability determinations for D-Limit orders will utilize CQI 2. Thus, as proposed, if a D-Limit order is resting at a price at or more aggressive than the price of a crumbling quote determination price level in effect, it will be adjusted to a price one MPV less aggressive than such crumbling quote determination price level. Similarly, an incoming D-Limit order priced at or more aggressive than the price of a crumbling quote determination price level in effect will be adjusted to a price one MPV less aggressive than the crumbling quote determination price level. Note that, as distinct from CQI-enhanced pegged orders, a D-Limit order would only be subject to a price adjustment if it is priced at or more aggressive than the crumbling quote determination price level in effect, while CQI-enhanced pegged orders subject to CQI 2 are restricted from exercising price discretion past their resting price when the CQI is on for the same side of the market as such orders regardless of whether the price at which it turned on is currently equal to the

NBB or NBO (as applicable). IEX believes that the difference in approach is appropriate because once the price of a D-Limit order is adjusted it remains at that price indefinitely, unless the Member entering the order elected to have the order re-priced after ten (10) milliseconds if the order is resting at a price less aggressive than the NBB or NBO (as applicable) pursuant to IEX Rule 11.190(b)(7)(E)(i) or if subject to another automatic price adjustment. In contrast, CQI-enhanced pegged orders are only restricted from exercising price discretion for up to two (2) milliseconds. Thus, IEX believes that D-Limit orders should only be price adjusted relative to the price that was actually the subject of a crumbling quote determination.

IEX believes that using CQI 2 will incrementally enhance the existing protection provided by D-Limit orders by providing greater coverage (i.e., identifying more potentially crumbling quotes) with comparable accuracy. IEX estimated the impact of CQI 1 and CQI 2 on standard limit order executions by simulating the markouts had the orders been subject to the protection of CQI 1 or CQI 2. Assessment of these executions is designed to simulate differences in adverse selection protection from CQI 1 and CQI 2. As shown in the chart below, both CQI 1 and CQI 2 result in improved markouts over executions without CQI protection, but CQI 2 would have provided incrementally enhanced protection compared to CQI 1 (as measured by markouts) because it is better at identifying situations when adverse selection is most likely:



Specific Rule Changes

Accordingly, IEX proposes to amend IEX Rules 11.190(b)(7)(A) and (B) to reference to IEX Rule 11.190(g)(2) (which describes CQI 2) rather than Rule 11.190(g)(1) (which describes CQI 1) to thereby specify and describe that quote instability determinations for D-Limit orders will be made by CQI 2.

Additionally, IEX proposes to amend the first sentence of Rule 11.190(g)(2) to add the words “at that price level” after the word “effect” and before the word “for” to specify that a CQI 2 determination is at a particular price level. This change is necessary so that the price of a D-Limit will only be adjusted if at or more aggressive than the CQI 2 quote instability determination price level, as is currently the case with CQI 1 and as discussed above.

Finally, IEX proposes to make a clarifying amendment to the last sentence of the second paragraph of IEX Rule 11.190(g) to add the words “paragraph (g)(1) of” after the

second word of the sentence to better clarify that the limitations on the referenced terms specified therein are applicable only to paragraph (g)(1) of IEX Rule 11.190 rather than to the entire rule wherein such references are as defined in IEX Rule 1.160; and

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 ninety (90) days of effectiveness of this rule filing.

b. Statutory Basis

IEX believes that the proposed rule change is consistent with Section 6(b)³⁹ of the Act in general, and furthers the objectives of Section 6(b)(5) of the Act,⁴⁰ in particular, in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest. Specifically, and as discussed in the Purpose section, the proposal is designed to enhance the existing protections provided by D-Limit orders by using the SEC approved CQI 2 to make quote instability determinations, which is designed to incrementally increase the coverage of the quote instability calculation in predicting whether a particular quote is unstable while maintaining the quote instability calculation's accuracy rate in predicting the direction and timing of the next price change in the NBB or NBO, as applicable. Because D-Limit orders are subject to a price adjustment to one MPV less aggressive than the CQI Price if priced at or more aggressive than the CQI Price when the Exchange's probabilistic model

³⁹ 15 U.S.C. 78f.

⁴⁰ 15 U.S.C. 78f(b)(5).

identifies that such price appears to be stale, increasing the coverage of the quote instability calculation is designed to provide additional protection to D-Limit orders from adverse selection associated with latency arbitrage during those times. Moreover, IEX's market data analysis, as described in the Purpose section evidences that, as with CQI 1, CQI 2 is "on" for only a small portion of the trading day while providing robust protection.

The Exchange believes that the proposed rule change may result in more and larger sized displayed and non-displayed D-Limit orders being entered on IEX as a result of the improved coverage and continued accuracy of CQI 2. To the extent more orders are entered, the increased liquidity would benefit all IEX members and their customers.

Furthermore, the Exchange notes that all Members are eligible to use D-Limit orders, and therefore all Members are eligible to benefit from the proposed enhanced D-Limit's protections against adverse selection. Thus, the Exchange believes that application of the rule change is equitable and not unfairly discriminatory.

Additionally, the Exchange notes that CQI 2 is a fixed formula specified transparently in IEX's rules, that was previously approved by the SEC.⁴¹ The Exchange is not proposing to add any new functionality, but merely to utilize an SEC approved quote instability calculation for D-Limit orders that is designed to increase its coverage in predicting a crumbling quote. Thus, IEX does not believe that the proposal raises any new or novel issues that have not already been considered by the Commission, in that IEX's rule filings to adopt both the D-Limit order type and CQI 2 were previously

⁴¹ See supra note 8.

approved by the Commission.

The Exchange believes it is consistent with the Act to add the words “paragraph (g)(1) of” after the second word of the sentence to better clarify that the limitations on the referenced terms specified therein are applicable only to paragraph (g)(1) of IEX Rule 11.190 rather than to the entire rule wherein such references are as defined in IEX Rule 1.160. This proposed change is designed to avoid any potential confusion as to the applicability of the referenced terms.

Finally, the Exchange believes it is consistent with the Act to amend the first sentence of Rule 11.190(g)(2) to add the words “at that price level” after the word “effect” and before the word “for” to specify that an CQI 2 determination is at a particular price level. As discussed in the Purpose section, with the proposed use of CQI 2 to make quote instability determinations for D-Limit orders, it is necessary to specify that each such determination will be at a particular price.

4. 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. To the contrary, as discussed in the Statutory Basis section, the proposal is designed to enhance IEX’s competitiveness by incentivizing the entry of increased liquidity.

With regard to intra-market competition, the proposed changes to the quote instability calculation 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 Exchange's D-Limit order type and CQI 2.⁴² As discussed in the Purpose and Statutory Basis sections, the proposed rule change is designed to merely utilize an SEC approved enhanced quote instability calculation; therefore, no new burdens are being proposed.

With regard to inter-market competition, other exchanges are free to adopt similar quote instability calculations. In this regard, the Exchange notes that that NYSE American LLC has adopted a rule copying an earlier iteration of the Exchange's Discretionary Peg Order type and quote instability calculation.⁴³

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

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 Act⁴⁴ and paragraph (f)(6) of Rule 19b-4 thereunder.⁴⁵ 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

⁴² See supra notes 8 and 13.

⁴³ See NYSE American LLC Rule 7.31E(h)(3)(D).

⁴⁴ 15 U.S.C. 78s(b)(3)(A).

⁴⁵ 17 CFR 240.19b-4(f)(6).

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.⁴⁶

The Exchange believes that the proposed rule change meets the criteria of subparagraph (f)(6) of Rule 19b-4⁴⁷ because it would not significantly affect the protection of investors or the public interest. Rather, the proposed rule change is designed to benefit investors and the public interest by enhancing the existing protections provided by D-Limit orders by using the SEC approved CQI 2 to make quote instability determinations, as discussed in the Purpose and Statutory Basis sections.

IEX notes (as discussed in the Statutory Basis section) that the D-Limit order type and CQI 2 were each approved by the Commission, and this proposed rule change merely combines these two aspects of IEX's rules. Consistent with "Commission Guidance and Amendment to the Rule Relating to Organization and Program Management Concerning Proposed Rule Changes by Self-Regulatory Organizations,"⁴⁸ each policy issue raised by this proposed rule change has been previously considered by the Commission when IEX's D-Limit order type and CQI 2 were approved pursuant to Section 19(b)(2) of the Act, and the proposed rule change resolves each such policy issue in a manner consistent with such prior approvals. Accordingly, the Exchange believes that the proposed rule

⁴⁶ 17 CFR 240.19b-4(f)(6)(iii).

⁴⁷ 17 CFR 240.19b-4(f)(6).

⁴⁸ See Securities Exchange Act Release No. 58092 (July 3, 2008), 73 FR 40144, 40147 (July 11, 2008).

change is noncontroversial and satisfies the requirements of Rule 19b-4(f)(6).⁴⁹

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.

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.

⁴⁹ 17 CFR 240.19b-4(f)(6).

Exhibit 5 – Text of Proposed Rule Change.

EXHIBIT 1

SECURITIES AND EXCHANGE COMMISSION

(Release No. 34 -); File No. SR-IEX-2023-10

Self-Regulatory Organizations: Investors Exchange LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change to Amend IEX Rules 11.190(b)(7) and 11.190(g).

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”),⁴ and Rule 19b-4 thereunder,⁵ IEX is filing with the Commission a proposed rule change to amend IEX Rules 11.190(b)(7) and 11.190(g) to modify the quote instability calculation used for Discretionary Limit orders. 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

¹ 15 U.S.C. 78s(b)(1).

² 15 U.S.C. 78a.

³ 17 CFR 240.19b-4.

⁴ 15 U.S.C. 78s(b)(1).

⁵ 17 CFR 240.19b-4.

⁶ 17 CFR 240.19b-4(f)(6)(iii).

hereto as Exhibit 1. The text of the proposed rule change is attached as Exhibit 5.

The text of the proposed rule change is available at the Exchange's website at www.iextrading.com, 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 purpose of the proposed rule change is to amend IEX Rules 11.190(b)(7) and 11.190(g) to change which proprietary mathematical calculation is used to make quote instability determinations for Discretionary Limit ("D-Limit")⁷ orders (i.e., 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, also referred to as the "crumbling quote indicator" or "CQI").⁸ Currently, IEX supports two versions of the CQI – Option 1 Crumbling Quote⁹ (which is based on the CQI in effect when IEX began operating as a national securities exchange in 2016) ("CQI

⁷ See IEX Rule 11.190(b)(7).

⁸ A D-Limit order may be a displayed or non-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, but will be adjusted to a less-aggressive price during periods of quote instability, as defined in IEX Rule 11.190(g).

⁹ See IEX Rule 11.190(g)(1).

1”) and Option 2 Crumbling Quote¹⁰ (which was recently adopted¹¹) (“CQI 2”). Users¹² submitting the following types of pegged orders -- Discretionary Peg (“D-Peg”)¹³ orders, primary peg (“P-Peg”)¹⁴ orders, and Corporate Discretionary Peg (“C-Peg”)¹⁵ orders (collectively “CQI-enhanced pegged orders”) – have the option of selecting either CQI 1 or CQI 2 to make quote instability determinations. CQI 1 is used to make quote instability determinations for D-Limit orders.

IEX proposes to utilize CQI 2, instead of CQI 1, to make quote instability determinations for D-Limit orders, based on its superior performance as described herein.

Background

D-Limit orders are designed to protect liquidity providers from potential adverse selection by latency arbitrage trading strategies in a fair and nondiscriminatory manner.¹⁶ A D-Limit order may be a displayed or non-displayed limit order that upon entry and when posting to the Order Book¹⁷ is priced to be equal to and ranked at the order’s limit price, but will be adjusted to a less-aggressive price during periods of quote instability, as defined in IEX Rule

¹⁰ See IEX Rule 11.190(g)(2).

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

¹² See IEX Rule 1.160(qq).

¹³ See Rule 11.190(b)(10).

¹⁴ See Rule 11.190(b)(8).

¹⁵ See Rule 11.190(b)(16). Note that C-Peg orders can only be buy orders, so any discussion of D-Peg sell orders does not apply to C-Peg orders.

¹⁶ See Securities Exchange Act Release No. 87814 (December 20, 2019), 84 FR 71997, 71998 (December 30, 2019) (SR-IEX-2019-15) (“D-Limit Proposal”); see also Securities Exchange Act Release No. 89686 (August 26, 2020), 85 FR 54438 (September 1, 2020) (SR-IEX-2019-15) (“D-Limit Approval Order”).

¹⁷ See IEX Rule 1.160(p).

11.190(g).¹⁸

Specifically, if the System¹⁹ receives a D-Limit buy (sell) order during a period of quote instability (i.e., when a quote instability determination is in effect and the CQI is “on”), and the D-Limit order has a limit price equal to or higher (lower) than the quote instability determination price level (“CQI Price”), the price of the order will be automatically adjusted by the System to one (1) MPV²⁰ lower (higher) than the CQI Price (the “effective limit price”). Similarly, when unexecuted shares of a D-Limit buy (sell) order are posted to the Order Book, if a quote instability determination is made and such shares are ranked and displayed (in the case of a displayed order) by the System at a price equal to or higher (lower) than the CQI Price, the price of the order will be automatically adjusted by the System to a price one MPV lower (higher) than the quote instability price level.²¹

Once the price of a D-Limit order that has been posted to the Order Book is automatically adjusted by the System, the order will continue to be ranked and displayed (in the case of a displayed order) at the adjusted price, unless subject to another automatic adjustment, if the order is subject to the price sliding provisions of IEX Rule 11.190(h), or if the User elects that the order will be re-priced if resting at a price that is less aggressive than the NBB (for a buy order) or NBO (for a sell order) ten (10) milliseconds after the most recent quote instability determination pursuant to IEX Rule 11.190(b)(7)(E)(i). Otherwise, a D-Limit order operates in the same manner as either a displayed or non-displayed limit order, as applicable.²²

¹⁸ See IEX Rules 11.190(b)(7)(A) and (B) and 11.190(g)(1).

¹⁹ See Rule 1.160(m).

²⁰ See IEX Rule 11.210.

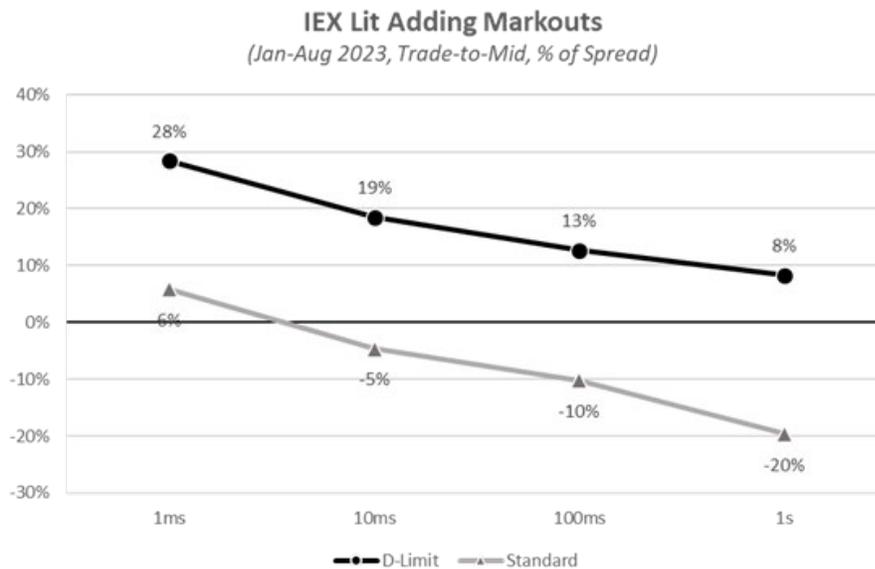
²¹ See IEX Rule 11.190(b)(7)(C) and (D).

²² See IEX Rule 11.190(b)(7).

Since the launch of the D-Limit order type in October 2020, IEX has regularly assessed its performance. This assessment substantiates that D-Limit orders experience enhanced protection (as compared to regular limit orders) from unfavorable executions at prices that the Exchange's probabilistic CQI model predicts are about to become "stale." In the rule filing proposing to adopt the D-Limit order type, IEX noted that approximately 25% of displayed volume occurred when the CQI was on, in aggregate resulting in less favorable markouts²³ for such executions than when CQI was off. This remains the case for displayed volume from regular limit orders that trade during periods of quote instability. The D-Limit order type was designed to solve for this issue and has been successful in this regard. Since its launch, less than 1% of displayed volume from D-Limit orders occurs when the CQI is on.²⁴ As a result, users of displayed D-Limit orders experience substantially more favorable markouts than users of regular displayed limit orders, as shown in the chart below:

²³ Markouts measure the direction and degree to which the market moved after an execution, and are often measured as the difference between the execution price and the midpoint of the NBBO at various time intervals after a trade. Markouts are typically used as a way to measure the "quality" of a trade. In particular, short-term markouts of several milliseconds after the time of execution, are often used to assess whether an order was subject to "adverse selection" that can occur when a liquidity providing order is executed at a price that was about to become stale as a result of certain speed-based trading strategies.

²⁴ These executions occur when D-Limit buy (sell) orders are adjusted 1 MPV lower (higher) than the CQI Price but are still executed against an Intermarket Sweep Order (ISO), which accesses multiple price levels at a time, therefore accessing the D-Limit order at its new, more passive, price.



Overview of CQI models

As noted above, IEX supports two versions of the CQI. Currently, D-Limit orders utilize the CQI 1 version of the CQI for making quote instability determinations. In determining whether a crumbling quote exists, CQI 1 utilizes real time relative quoting activity of eight exchanges' Protected Quotations²⁵ and a proprietary mathematical calculation (the "quote instability calculation") to assess the probability of an imminent change to the current Protected NBB²⁶ to a lower price or Protected NBO²⁷ to a higher price for a particular security ("quote instability factor") during the Regular Market Session²⁸. When the quoting activity meets the predefined objective conditions specified in IEX Rule 11.190(g)(1) and the quote instability

²⁵ Each exchange's Protected Quotation is its best displayed bid or offer. See Rule 1.160(bb). Current Rule 11.190(g) uses the following eight exchanges' Protected Quotations: New York Stock Exchange LLC ("XNYS"), the Nasdaq Stock Market LLC ("XNGS"), NYSE Arca, Inc. ("ARCX"), Nasdaq BX, Inc. ("XBOS"), Cboe BYX Exchange, Inc. ("BATY"), Cboe Bats BZX Exchange, Inc. ("BATS"), Cboe EDGA Exchange, Inc. ("EDGA"), and Cboe EDGX Exchange, Inc. ("EDGX").

²⁶ See Rule 1.160(cc).

²⁷ See Rule 1.160(cc).

²⁸ See IEX Rule 1.160(gg). Quote instability assessments are only made by the Exchange System during the Regular Market Session because the order types that utilize the assessment, such as D-Limit, are only eligible to trade during the Regular Market Session.

factor calculated is greater than the Exchange's defined threshold ("quote instability threshold"), the System treats the NBB or NBO as not stable ("quote instability" or a "crumbling quote"), which turns the CQI on at that CQI Price. During all other times, the quote is considered stable ("quote stability") and the CQI is off. The System independently assesses the stability of the Protected NBB and Protected NBO for each security.²⁹

When CQI 1 is on, it remains in effect at the CQI Price for two milliseconds, unless a new determination is made before the CQI turns off. Only one determination may be in effect at any given time for a particular security (i.e., the System will only treat one side of the Protected NBBO as unstable in a particular security at any given time and the CQI can only be on at one price level).³⁰ A new determination may be made after at least 200 microseconds have elapsed since the preceding determination, or a price change on either side of the best displayed bid or offer of the eight exchanges used for the current quote instability calculation occurs, whichever is first. If a new determination is made, the original determination is no longer in effect. A new determination can be on either side of the best displayed bid or offer of the eight exchanges used for the current quote instability calculation and at the same or different price level as the original determination.

CQI 2 was adopted in 2022³¹ as an alternative for CQI-enhanced pegged orders, and is designed to incrementally increase the coverage³² of the quote instability calculation in

²⁹ The quote stability variables, fixed coefficients and formula were developed by the Exchange based on extensive research, analysis and validation to identify when there is a heightened probability of an imminent quote change to the NBB or NBO.

³⁰ See IEX Rule 11.190(g)(1).

³¹ See supra note 11. The Commission received no comments on IEX's proposed rule change to adopt CQI 2.

³² "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).

predicting whether a particular quote is unstable by adjusting the logic underlying the quote instability calculation and introducing enhanced functionality designed to increase the number of crumbling quotes identified, while maintaining the quote instability calculation's accuracy rate³³ in predicting the direction and timing of the next price change in the NBB or NBO, as applicable.

As described above, 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 treat the quote as unstable. CQI 2, by contrast, utilizes a quote instability calculation in which nine separate rules -- each with specific conditions based on either the price, size, or price and size of the Signal Exchanges'³⁴ Protected Quotations -- can trigger a quote instability determination for either the NBB or the NBO of a particular security.³⁵ Specifically, CQI 2 expands the sources and types of market data used, utilizes a more plain English rules-based approach, modifies the minimum time period between quote instability determinations, and includes activation thresholds to enable real-time accuracy assessment of each rule with the effect of deactivating a rule that is not meeting specified metrics.³⁶ In addition, CQI-enhanced pegged orders are restricted from exercising price discretion when the CQI is on, regardless of whether the current NBB or NBO (as applicable) is the same as the CQI Price.

The CQI 2 quote instability rules include four categories of Protected Quotation changes (each comprised of one or more rules) as follows:

- Disappearing bids (or offers) – This category includes four rules that focus on

³³ “Accuracy rate” means the percentage of time that the CQI accurately predicted the direction of the next price change (even if it was more than two milliseconds after the quote instability determination).

³⁴ For CQI 2, the Signal Exchanges include the eight exchanges used in CQI 1, with the addition of MIAX PEARL, LLC (“EPRL”), MEMX LLC (“MEMX”), and Nasdaq PHLX LLC (“XPHL”).

³⁵ See supra note 11.

³⁶ See supra note 11.

whether one or more of the Signal Exchanges is no longer disseminating a bid or offer at the Signal Best Bid³⁷ or Signal Best Offer³⁸ as applicable;³⁹

- Recent changes in quote size – This category includes two rules that focus on whether there is an imbalance in the size of bids and offers at the Signal Best Bid or Signal Best Offer;
- Locked or crossed market – This category includes one rule that focuses on situations where the Signal Best Bid and Signal Best Offer are locked or crossed; and
- Quotation Changes – This category includes two rules that focus on changes to the Signal Best Bid or Signal Best Offer.

On a security-by-security basis, if the specified conditions of any of the quote instability rules are met, then the rule is deemed to be True for that security. A rule must also be active (in addition to True) before it can trigger a quote instability determination. When one or more quote instability rules is deemed to be True and any of such rules are active, the System will trigger a quote instability determination and treat the quote as unstable. This approach is designed to enable broader coverage while controlling for overall accuracy of the quote instability determinations by providing a mechanism to turn off a particular rule when market conditions are such that it is relatively less accurate in predicting a crumbling quote. Based upon market data analysis, IEX believes that utilizing activation thresholds is a useful innovation because it

³⁷ “Signal Best Bid” means the highest Protected Bid of the Signal Exchanges. See proposed IEX Rule 11.190(g)(2)(B)(i).

³⁸ “Signal Best Offer” means the lowest Protected Offer of the Signal Exchanges. See proposed IEX Rule 11.190(g)(2)(B)(v).

³⁹ The disappearing bid/offers rules are closely related to the Option 1 Crumbling Quote approach to the quote instability calculation, in that both approaches share the Delta quote instability variable, which is heavily weighted in the current quote instability calculation. See the Option 2 Crumbling Quote Proposal, *supra* note 11.

enables the use of rules that can be highly predictive in certain market conditions but not in others.

CQI 2 also differs from CQI 1 with respect to three different time and direction constraints, which are designed to provide a more dynamic methodology for quote instability determinations, thereby incrementally increasing the coverage of the formula in predicting a crumbling quote by expanding the scope of the model to additional situations where the Exchange's probabilistic model predicts that the NBB or NBO is in the process of moving to a less aggressive price and is about to become stale.

First, for CQI 2, the quote instability calculation can turn on concurrently on both sides of the market (i.e., the NBB and NBO) and always remains on for the full two millisecond period each time it turns on. In CQI 1, the quote instability calculation independently assesses the stability of the Protected NBB and Protected NBO for each security, but it can only turn on for one side of the market for each security at a time. Second, when CQI 2 turns on, it is not constrained to a specific price level, as compared to CQI 1 which turns on at a specific CQI Price. Thus, if the NBB or NBO (as applicable) changes during the time CQI 1 is on, CQI-enhanced pegged orders (that have elected CQI 1) are not constrained from exercising discretion since the CQI Price is no longer equal to the current NBB or NBO (as applicable).⁴⁰ In contrast, for CQI-enhanced pegged orders (that have elected CQI 2), the CQI continues to turn on at a specific price (the quote instability determination price level), but CQI-enhanced pegged orders are constrained from exercising discretion past their resting price when the CQI is on for the same side of the market as such orders regardless of whether the price at which it turned on is currently equal to the NBB or NBO (as applicable). Third, for CQI 2, the System can make a

⁴⁰ See IEX Rules 11.190(b)(8)(K)(i) and (ii), (b)(10)(K)(i) and (ii), (b)(16)(K).

new quote instability determination 250 microseconds after a prior determination, rather than 200 microseconds for CQI 1.

IEX introduced CQI 2 into its System on March 31, 2023 (i.e., it began generating quote instability determinations for informational and planning purposes) and it became available for CQI-enhanced pegged orders on May 16, 2023.⁴¹ Consistent with the Exchange’s market data analysis prior to proposing CQI 2, data analysis for April through July of 2023 substantiates that CQI 2 provides incrementally more protection (i.e., increased coverage and accuracy) than CQI 1 while still being “on” for only several seconds a day per symbol, as set forth in the chart below:

<u>Metric</u>	<u>CQI 1</u>	<u>CQI 2</u>
Average time on ^a (average of all symbols)	1.9 seconds	3.1 seconds
Average time on (volume weighted)	18.0 seconds	32.1 seconds
Coverage (volume weighted) ^b	46.9%	63.2%
Accuracy Rate (volume weighted) ^c	78%	80%
% of the Day CQI is “On” (volume-weighted)	0.077%	0.137%
% of the day D-Limit is available at specified limit price	99.923%	99.863%

^a “Time on” means the average time the CQI is on during a day per symbol.

^b See *supra* note 32.

^c “Accuracy” means the percent of time that following the CQI being “on” the NBB or NBO (as applicable) moves in the predicted direction on the next price change.

Proposal

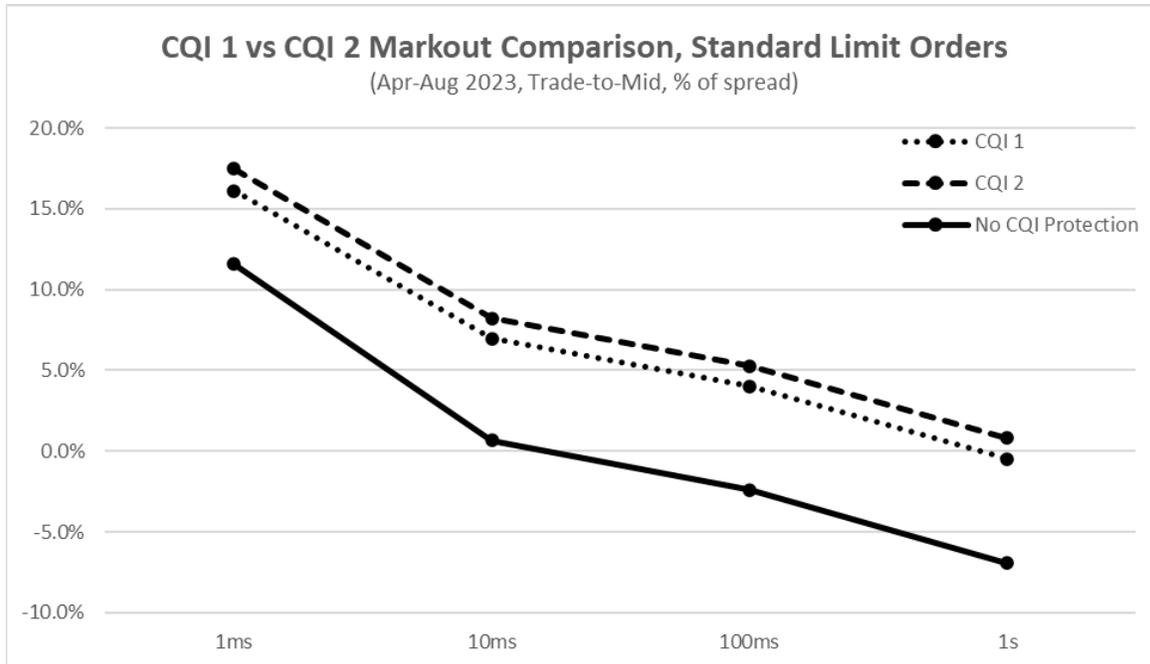
Based on its assessment (as described above) that CQI 2 provides incrementally greater coverage and accuracy in predicting a crumbling quote than CQI 1, IEX proposes to amend IEX Rules 11.190(b)(7) and 11.190(g)(2) to provide that quote instability determinations for D-Limit orders will utilize CQI 2. Thus, as proposed, if a D-Limit order is resting at a price at or more aggressive than the price of a crumbling quote determination price level in effect, it will be adjusted to a price one MPV less aggressive than such crumbling quote determination price

⁴¹ See IEX Trading Alert # 2023-008, available at <https://iextrading.com/alerts/#/215>.

level. Similarly, an incoming D-Limit order priced at or more aggressive than the price of a crumbling quote determination price level in effect will be adjusted to a price one MPV less aggressive than the crumbling quote determination price level. Note that, as distinct from CQI-enhanced pegged orders, a D-Limit order would only be subject to a price adjustment if it is priced at or more aggressive than the crumbling quote determination price level in effect, while CQI-enhanced pegged orders subject to CQI 2 are restricted from exercising price discretion past their resting price when the CQI is on for the same side of the market as such orders regardless of whether the price at which it turned on is currently equal to the NBB or NBO (as applicable). IEX believes that the difference in approach is appropriate because once the price of a D-Limit order is adjusted it remains at that price indefinitely, unless the Member entering the order elected to have the order re-priced after ten (10) milliseconds if the order is resting at a price less aggressive than the NBB or NBO (as applicable) pursuant to IEX Rule 11.190(b)(7)(E)(i) or if subject to another automatic price adjustment. In contrast, CQI-enhanced pegged orders are only restricted from exercising price discretion for up to two (2) milliseconds. Thus, IEX believes that D-Limit orders should only be price adjusted relative to the price that was actually the subject of a crumbling quote determination.

IEX believes that using CQI 2 will incrementally enhance the existing protection provided by D-Limit orders by providing greater coverage (i.e., identifying more potentially crumbling quotes) with comparable accuracy. IEX estimated the impact of CQI 1 and CQI 2 on standard limit order executions by simulating the markouts had the orders been subject to the protection of CQI 1 or CQI 2. Assessment of these executions is designed to simulate differences in adverse selection protection from CQI 1 and CQI 2. As shown in the chart below, both CQI 1 and CQI 2 result in improved markouts over executions without CQI protection, but

CQI 2 would have provided incrementally enhanced protection compared to CQI 1 (as measured by markouts) because it is better at identifying situations when adverse selection is most likely:



Specific Rule Changes

Accordingly, IEX proposes to amend IEX Rules 11.190(b)(7)(A) and (B) to reference to IEX Rule 11.190(g)(2) (which describes CQI 2) rather than Rule 11.190(g)(1) (which describes CQI 1) to thereby specify and describe that quote instability determinations for D-Limit orders will be made by CQI 2.

Additionally, IEX proposes to amend the first sentence of Rule 11.190(g)(2) to add the words “at that price level” after the word “effect” and before the word “for” to specify that a CQI 2 determination is at a particular price level. This change is necessary so that the price of a D-Limit will only be adjusted if at or more aggressive than the CQI 2 quote instability determination price level, as is currently the case with CQI 1 and as discussed above.

Finally, IEX proposes to make a clarifying amendment to the last sentence of the second paragraph of IEX Rule 11.190(g) to add the words “paragraph (g)(1) of” after the second word of

the sentence to better clarify that the limitations on the referenced terms specified therein are applicable only to paragraph (g)(1) of IEX Rule 11.190 rather than to the entire rule wherein such references are as defined in IEX Rule 1.160; and

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 ninety (90) days of effectiveness of this rule filing.

2. Statutory Basis

IEX believes that the proposed rule change is consistent with Section 6(b)⁴² of the Act in general, and furthers the objectives of Section 6(b)(5) of the Act,⁴³ in particular, in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest. Specifically, and as discussed in the Purpose section, the proposal is designed to enhance the existing protections provided by D-Limit orders by using the SEC approved CQI 2 to make quote instability determinations, which is designed to incrementally increase the coverage of the quote instability calculation in predicting whether a particular quote is unstable while maintaining the quote instability calculation's accuracy rate in predicting the direction and timing of the next price change in the NBB or NBO, as applicable. Because D-Limit orders are subject to a price adjustment to one MPV less aggressive than the CQI Price if priced at or more aggressive than the CQI Price when the Exchange's probabilistic model identifies that such price appears to be stale, increasing the coverage of the quote instability calculation is designed to provide additional protection to D-Limit orders from

⁴² 15 U.S.C. 78f.

⁴³ 15 U.S.C. 78f(b)(5).

adverse selection associated with latency arbitrage during those times. Moreover, IEX's market data analysis, as described in the Purpose section evidences that, as with CQI 1, CQI 2 is "on" for only a small portion of the trading day while providing robust protection.

The Exchange believes that the proposed rule change may result in more and larger sized displayed and non-displayed D-Limit orders being entered on IEX as a result of the improved coverage and continued accuracy of CQI 2. To the extent more orders are entered, the increased liquidity would benefit all IEX members and their customers.

Furthermore, the Exchange notes that all Members are eligible to use D-Limit orders, and therefore all Members are eligible to benefit from the proposed enhanced D-Limit's protections against adverse selection. Thus, the Exchange believes that application of the rule change is equitable and not unfairly discriminatory.

Additionally, the Exchange notes that CQI 2 is a fixed formula specified transparently in IEX's rules, that was previously approved by the SEC.⁴⁴ The Exchange is not proposing to add any new functionality, but merely to utilize an SEC approved quote instability calculation for D-Limit orders that is designed to increase its coverage in predicting a crumbling quote. Thus, IEX does not believe that the proposal raises any new or novel issues that have not already been considered by the Commission, in that IEX's rule filings to adopt both the D-Limit order type and CQI 2 were previously approved by the Commission.

The Exchange believes it is consistent with the Act to add the words "paragraph (g)(1) of" after the second word of the sentence to better clarify that the limitations on the referenced terms specified therein are applicable only to paragraph (g)(1) of IEX Rule 11.190 rather than to the entire rule wherein such references are as defined in IEX Rule 1.160. This proposed change

⁴⁴ See supra note 11.

is designed to avoid any potential confusion as to the applicability of the referenced terms.

Finally, the Exchange believes it is consistent with the Act to amend the first sentence of Rule 111.190(g)(2) to add the words “at that price level” after the word “effect” and before the word “for” to specify that an CQI 2 determination is at a particular price level. As discussed in the Purpose section, with the proposed use of CQI 2 to make quote instability determinations for D-Limit orders, it is necessary to specify that each such determination will be at a particular price.

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. To the contrary, as discussed in the Statutory Basis section, the proposal is designed to enhance IEX’s competitiveness by incentivizing the entry of increased liquidity.

With regard to intra-market competition, the proposed changes to the quote instability calculation 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 Exchange’s D-Limit order type and CQI 2.⁴⁵ As discussed in the Purpose and Statutory Basis sections, the proposed rule change is designed to merely utilize an SEC approved enhanced quote instability calculation; therefore, no new burdens are being proposed.

With regard to inter-market competition, other exchanges are free to adopt similar quote instability calculations. In this regard, the Exchange notes that that NYSE American LLC has adopted a rule copying an earlier iteration of the Exchange’s Discretionary Peg Order type and

⁴⁵ See supra notes 11 and 16.

quote instability calculation.⁴⁶

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)⁴⁷ of the Act and Rule 19b-4(f)(6)⁴⁸ 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-4⁴⁹ because it would not significantly affect the protection of investors or the public interest. Rather, the proposed rule change is designed to benefit investors and the public interest by enhancing the existing protections provided by D-Limit orders by using the SEC approved CQI 2 to make quote instability determinations, as discussed in the Purpose and Statutory Basis sections.

IEX notes (as discussed in the Statutory Basis section) that the D-Limit order type and CQI 2 were each approved by the Commission, and this proposed rule change merely combines these two aspects of IEX’s rules. Consistent with “Commission Guidance and Amendment to the Rule Relating to Organization and Program Management Concerning Proposed Rule Changes by

⁴⁶ See NYSE American LLC Rule 7.31E(h)(3)(D).

⁴⁷ 15 U.S.C. 78s(b)(3)(A).

⁴⁸ 17 CFR 240.19b-4(f)(6).

⁴⁹ 17 CFR 240.19b-4(f)(6).

Self-Regulatory Organizations,”⁵⁰ each policy issue raised by this proposed rule change has been previously considered by the Commission when IEX’s D-Limit order type and CQI 2 were approved pursuant to Section 19(b)(2) of the Act, and the proposed rule change resolves each such policy issue in a manner consistent with such prior approvals. Accordingly, the Exchange believes that the proposed rule change is noncontroversial and satisfies the requirements of Rule 19b-4(f)(6).⁵¹

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.

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

⁵⁰ See Securities Exchange Act Release No. 58092 (July 3, 2008), 73 FR 40144, 40147 (July 11, 2008).

⁵¹ 17 CFR 240.19b-4(f)(6).

Commission shall institute proceedings under Section 19(b)(2)(B)⁵² 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-2023-10 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-2023-10. 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

⁵² 15 U.S.C. 78s(b)(2)(B).

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-2023-10 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.⁵³

Sherry R. Haywood,
Assistant Secretary.

⁵³ 17 CFR 200.30-3(a)(12).

Exhibit 5 – Text of Proposed Rule Change

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

Rule 11.190. Orders and Modifiers

(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)-(19) 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) No Change.
- (2) Option 2 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 (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) – (D) No change.
- (3) No change.
