



February 13, 2020

Ms. Vanessa Countryman
Secretary
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-0609

Re: File No. SR-IEX-2019-15

Dear Ms. Countryman:

Investors Exchange LLC (“IEX”) is writing to respond to certain comment letters¹ on IEX’s rule filing with the Securities and Exchange Commission (“Commission” or “SEC”) to add a new Discretionary Limit order type (“D-Limit”).² IEX believes D-Limit is an important innovation to encourage greater liquidity provision in the market by appropriately limiting the impact of certain microsecond-level latency arbitrage strategies, which create significant, demonstrable harm to investors and other market participants, a conclusion that continues to be reinforced by market comments³ and recent research.⁴ Such latency arbitrage strategies also act as a powerful disincentive to the posting of displayed quotes by market participants, which has led to a long-term trend of declining displayed liquidity and less transparency in equities trading.⁵

As described in detail in the D-Limit Filing, D-Limit is an optional limit order type that would automatically reprice when IEX’s Crumbling Quote Indicator (“CQI”) predicts certain imminent (within two milliseconds) price changes to the national best bid and offer (“NBBO”). This repricing is designed to protect users of D-Limit from being “picked off” by latency arbitrage strategies that operate in discrete moments when the prices that constitute the NBBO are changing. As shown in the D-Limit Filing, these

¹ Letter from Joanna Mallers, Secretary, FIA Principal Traders Group (“PTG”), to Vanessa Countryman, Secretary SEC, dated January 21, 2020; Letter from Adam Nunes, Head of Business Development, Hudson River Trading LLC (“HRT”), to Vanessa Countryman, Secretary, SEC, dated January 21, 2020; Letter from Joan Conley, Senior Vice President and Corporate Secretary, Nasdaq, Inc. (“Nasdaq”), to Vanessa Countryman, Secretary, SEC, dated January 21, 2020; Letter from Ellen Greene, Managing Director, Equity and Options Market Structure, Securities Industry and Financial Markets Association, dated February 3, 2020 (“SIFMA Committee Letter”), all avail. at <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915.htm>. The SIFMA Committee Letter contains a caveat that “views among our members are not uniform” as to D-Limit.

² See Securities Exchange Act Release No. 87814 (December 20, 2019), 84 FR 71997 (December 30, 2019) (“D-Limit Filing”).

³ See, e.g., Letter from Sean Paylor, Trader, AJO, L.P., to Vanessa A. Countryman, Secretary, SEC, dated February 10, 2020 (“AJO Letter”), Letter from Sanjana Kapur, Compliance Officer, Jefferies LLC, to Vanessa A. Countryman, Secretary, SEC, dated February 5, 2020 (“Jefferies Letter”), Letter from Thomas M. Merritt, Deputy General Counsel, Virtu Financial, to Vanessa A. Countryman, Secretary, SEC, dated January 16, 2020 (“Virtu Letter”).

⁴ See Wall Street Journal, “Ultrafast Trading Costs Investors Nearly \$5 Billion a Year, Study Says” (January 27, 2020); Aquilina, Budish, and O’Neill, “Quantifying the High-Frequency Trading “Arms Race”; A Simple New Methodology and Estimates, (January 2020), avail. at <https://www.fca.org.uk/publication/occasional-papers/occasional-paper-50.pdf> (“FCA Study”).

⁵ See Letter from Mehmet Kinak, Vice President & Global Head of Systematic Trading and Market Structure and Jonathan D. Siegel, Vice President & Senior Legal Counsel, T. Rowe Price, to Vanessa Countryman, Secretary, SEC, dated February 5, 2020 (“T. Rowe Price Letter”).

moments add up to only 5 to 10 seconds on average per stock per 6.5-hour (23,400 second) trading day. At all other times, D-Limit would operate like any other standard limit order. For the reasons provided in the D-Limit Filing and the responses below, IEX believes that D-Limit is fully consistent with the standards of the Securities Exchange Act of 1934 (“Act”) and should be promptly approved.

Our responses below are organized by topic area.

Comments Alleging Unfairness, Discrimination, or Burden on Competition

Various comments allege that D-Limit would unfairly benefit IEX or certain participants at the expense of others, burden competition, or provide some impermissible advantage to IEX.

Relative Benefits to Liquidity Makers Compared to Liquidity Takers

HRT stated that D-Limit would create an “asymmetric speed bump”, in which resting orders would be allowed to “fade”, since the repricing of those orders is not subject to IEX’s 350 microsecond “speed bump”. According to HRT, this feature would be unfair to participants that manage displayed order prices themselves. PTG commented that liquidity providers would be able to “free ride” on price discovery on other markets by posting quotes tied to the NBBO while allowing IEX to reprice when it is favorable to the resting order to do so. PTG further commented that D-Limit creates the equivalent of a “last look” option of the type permitted on certain other markets, allowing IEX to use the latest data to decide whether to remain firm or to reprice the order. According to PTG, D-Limit would also be unfair since it does not protect liquidity seekers from adverse price movements. The SIFMA Committee Letter makes the same “asymmetric speed bump” argument as HRT and PTG.

Response:

D-Limit would provide a tool to counteract “asymmetries” that are endemic in exchange trading today.

The term “asymmetry” is used by these commenters without acknowledging the numerous “asymmetries” that are inherent in the ways that exchanges operate today. These include the sale of multiple types of connections to exchange data centers differentiated by speed, the monopolistic pricing of proprietary market data as a faster alternative to consolidated data, and the use of faster computer “protocols”, compared to FIX, in transmitting messages. All of these provide asymmetric benefits to certain market participants, especially those that employ them in latency arbitrage strategies that “pick off” displayed exchange quotes just before a change in the NBBO. Exchanges sell these asymmetric benefits for huge profits. In the case of participants like electronic market makers and agency brokers serving investor clients, these tools have become necessary to compete with others in the same businesses, creating a barrier to entry and burden on competition in those businesses and contributing to a decline in the number of market makers in U.S. equity markets.⁶ Appendix A provides a partial product and price list as examples of these products, drawn from a Nasdaq website. All major exchange groups sell similar products.

⁶ See, e.g., “Winner-Takes-All Digital Economy Poses Risk for Capital Markets”, Financial Times (December 9, 2019).

In contrast, D-Limit would be offered to all IEX members at no additional cost over any other limit order and provides protections that benefit investors directly. Further, this new order type would not involve any additional latency. All orders to trade, cancels, or any other messages from all participants would continue to pass through a single 350-microsecond speed bump. The Commission has previously determined that this small delay is “de minimis” and does not impair fair and effective access to IEX’s quotations.⁷

The asymmetry involved in the latency arbitrage strategies that are the focus of D-Limit favors the few participants that can take liquidity using the most sophisticated tools, in contrast to both market makers and brokers acting for investors that provide liquidity by posting displayed quotes. Market makers may post thousands of quotes simultaneously and are functionally unable to adjust all of these quotes as quickly as a firm using a latency arbitrage strategy in a single stock is able to react to them. Brokers representing investors must cope with the latency caused by geographic dispersion of exchanges, the additional latency caused by systems configurations required to comply with regulatory and risk parameters in their capacity as agent, and the need to route orders in different ways to meet the needs of their various clients. These factors mean that in a race to trade at the best and most accurate prices available, both market makers and brokers serving investors are destined to lose out to firms that can prioritize speed over all other factors.

In fact, recent research confirms that speed races that take place on a microsecond timeframe generally involve competition among firms pursuing latency arbitrage strategies to see who can “pick off” orders from parties that cannot react as quickly to price changes.⁸ In this case, the “loser” of the race simply misses one latency arbitrage profit opportunity, whereas the real loser is the liquidity provider, which receives a worse, “stale” price on its trade. This imbalance in market competition between those who provide liquidity, versus those who take it, necessarily reduces the incentives to provide displayed quotes and therefore reduces liquidity available to investors. As expressed in a supportive comment letter by global asset manager AGF: “One of the contributors to this downward trend [of displayed liquidity] has been the rise of high-speed trading, where faster data and technology purchased from exchanges is used to trade against participants who are slower. This phenomenon has caused many investors to steer orders away from exchanges, which ultimately reduces the displayed liquidity in the markets.”⁹

In evaluating the impact of these races on investors, IEX considered the proportion of resting orders that were submitted by different types of participants. In December 2019, 83.5% of all resting, displayed volume that was executed while the CQI was “on” was submitted by full-service and agency brokers.

⁷ Securities Exchange Act Release No. 78101 (June 17, 2016), 81 FR 41142 (June 23, 2016) (“IEX Approval Order”); Commission Interpretation Regarding Automated Quotations Under Regulation NMS, Securities Exchange Act Release No. 78102 (June 17, 2016), 81 FR 40785 (June 23, 2016) (“Automated Quotation Interpretation”)

⁸ “This overall pattern is consistent with a model in which many of the fastest traders primarily engage in sniping as opposed to liquidity provision, and significant liquidity is provided by market participants not at the cutting edge of speed.” FCA Study, at 47.

⁹ Letter from John Christofilos, Senior Vice President, Chief Trading Officer, AGF Management Limited, to Vanessa Countryman, Secretary, SEC, dated February 11, 2020, avail. at <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-6795485-208389.pdf>.

Clearly, the risks from latency arbitrage affect all types of market participants, and D-Limit is designed to provide an equal benefit to all of them.

It is therefore highly ironic that these commenters would criticize D-Limit as attempting to give an unwarranted advantage to providers of liquidity, which today are short-changed by these various asymmetries. Rather than conferring an advantage, D-Limit is seeking to limit a systemic disadvantage that prevails today.

IEX believes that exchanges are necessarily in the business of trying to balance the interests and concerns of various market participants in all the choices they make in designing their markets. This balance will never be perfect, but the Commission has said that when the interests of short-term traders and long-term investors conflict, the interests of long-term investors should prevail.¹⁰

Free Riding

PTG's comment that D-Limit would allow liquidity providers to "free ride" on price discovery on other markets ignores that D-Limit users will contribute to price discovery by specifying price limits. In addition, as supported by comments by market makers, D-Limit will give those participants an incentive to provide larger-sized quotes and narrower spreads.¹¹ Further, as discussed below, the use of exchange order types pegged to the NBBO (and therefore relying on quotes provided by others) is commonplace, and these have never been prohibited as examples of "free riding."

Last Look

The "last look" functionality that exists in certain foreign currency markets bears no resemblance to the D-Limit proposal. The "last look" advantage allows individual participants to enter orders, receive a contra-side matching order, and then decide whether to accept or reject it. Repricing of D-Limit orders is based on an objective and transparent methodology managed by IEX. Firms that benefit from "last look" are reacting to individual orders and deciding whether to accept them. Users of D-Limit have no advance, pre-trade knowledge of any contra-side orders on IEX. In addition, users of D-Limit have no discretion over whether repricing or a trade occurs. Repricing would happen solely in response to overall market price changes, not incoming orders, and trades would happen solely in accordance with the rules governing IEX's systems.

Liquidity Seekers

In response to the argument that D-Limit does not provide protection to liquidity seekers, IEX believes that D-Limit is narrowly-tailored to protect the interests of the vast majority of liquidity takers while also encouraging more participants to provide liquidity. Given that the CQI signal is on for only 0.02-0.04% of the trading day, participants who are trading during the 99.96% of the trading day when the signal is off are not impacted at all by D-Limit and therefore do not require protection from the strategies that are the focus of D-Limit, which specifically target displayed *resting* orders. Further, in contrast to other proposals that would apply broadly and impact all orders to take liquidity, the IEX proposal distinguishes

¹⁰ Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37500 (June 29, 2005).

¹¹ See, e.g., Virtu Letter, supra note 3.

fundamental seekers of liquidity from those using latency arbitrage strategies. D-Limit will provide a new liquidity source for these fundamental seekers when they urgently need to enter or exit positions.¹²

Fairness v. Other Liquidity Providers

PTG argues that D-Limit would allow users of D-Limit to unfairly increase their profitability compared to liquidity providers on other exchanges, because D-Limit would provide users “a unique mechanism to avoid unfavorable executions.”

Response:

D-Limit is available to all member firms equally, and participants have a choice of whether to use it or another type of order, including a standard limit order. All orders are ranked on the basis of price/time priority, so that any order that arrives first will trade first. Further, when a D-Limit order reprices, it will move to the “back of the queue” behind other orders that are at the more passive price level. Thus, the operation of D-Limit will not detract from price competition among displayed orders on IEX or provide any impermissible advantage compared to liquidity providers elsewhere. As noted above, liquidity providers in general face a systematic disadvantage as against parties using certain latency strategies. Providing a narrowly-tailored means to counteract that systematic disadvantage is not unfair.

Comments Alleging Unfair Advantage to IEX

PTG further alleges that IEX would itself gain “a material advantage by exempting its own activities from the speed bump that is otherwise universally applied.” Similarly, HRT claims that D-Limit would create an unnecessary and inappropriate burden on competition “as IEX will have granted its pricing technique” an advantage.

Response:

For context, it is important to understand that all exchanges have an “advantage” when they take action within their own systems (like repricing a pegged order), compared to members that need to traverse physical distance and connectivity hurdles to take the same type of action. The Commission addressed a similar question in the IEX Approval Order, finding that IEX’s Discretionary Peg (“D-Peg”) order type, which also takes action based on the CQI, is a “close variant” of the discretion and pegging functionality that exists on other exchanges.¹³

Further, unlike the “asymmetric advantages” that other exchanges routinely sell today (different connectivity, market data, trading protocols) for millions of dollars, IEX is offering D-Limit to all of its members equally and at no additional cost compared to any other limit order. The Commission also found this factor persuasive in deciding that the D-Peg order type was not unfairly discriminatory and did not act as a burden on competition: “Further, because non-displayed order types will be available to all

¹² T. Rowe Price Letter *supra* note 5.

¹³ IEX Approval Order, 81 FR at 41153.

Users of IEX, all Users will be able to benefit from this order type on IEX and thus utilize the POP/coil delay.”¹⁴

IEX also believes it is a peculiar objection that an exchange innovation that provides a new incentive for displayed liquidity to all of its members equally gives an unwarranted advantage to the exchange. IEX will not gain any competitive edge over other exchanges unless it is successful in attracting orders that lead to more stable liquidity that is broadly available to investors and brokers. The effort to seek this type of benefit is the hallmark of free market competition.

Regardless, if D-Limit provides value, other exchanges could seek SEC approval to adopt the same or a similar mechanism. IEX believes that, to gain approval, any exchange would need to demonstrate that its proposal is narrowly-designed and consistent with the Act, has broad support from investors, and is supported by hard data and analysis showing the expected benefit. We believe that innovation that passes all these tests would lead to more displayed liquidity across markets and more and better choices for investors.

Role of the Exchange/Broker-Dealer Function

HRT states that the use of price prediction shifts the exchange’s role from a platform to facilitate price discovery to an active participant in the price discovery function. Similarly, PTG argues that D-Limit involves “a level of discretion around order pricing and execution that is typically performed by broker-dealers rather than exchanges.” It argues this will create competitive implications between exchanges and member firms, given different regulatory frameworks. According to PTG, the IEX algorithm “will benefit from regulatory immunity granted to exchanges,” while broker-dealer algorithms are subject to a variety of requirements, including best execution.

Response:

First, for the reasons given above, broker-dealers acting on behalf of investors are not functionally able to defend against these latency arbitrage strategies, and therefore providing protection from them cannot be viewed as inherently a broker function. Brokers focus on macro-level order scheduling and routing to exchanges and other venues, while exchanges are responsible for micro-level order functions affecting order pricing and interaction (such as through the use of pegged orders). As stated by Jefferies, a major agency broker-dealer, D-Limit will help it address “one of the key problems faced by agency algorithms in a fragmented market – participating in price discovery without having to bear the costs of...getting ‘picked off’ by arbitrage-based strategies relying primarily on speed”.¹⁵

Second, brokers using D-Limit orders will influence the price discovery process by specifying a limit price. Further, the protection provided by D-Limit may encourage more market makers, investors, and brokers to provide displayed limit orders, which could improve the current price discovery function of the market.

¹⁴ *Id.*, at 41157.

¹⁵ See Jefferies Letter, *supra* note 3.

Third, the SEC has already approved the use of the CQI in repricing resting orders in its previous approvals of IEX's D-Peg order types.¹⁶

Finally, we note that the Commission rejected similar objections when it recently approved the Cboe BZX Exchange proposal to introduce an alternative method to trade at the closing price established on a primary listing market, which could compete with functions offered by broker-dealers. With regard to liability limits, the Commission noted that, while these may be different, this must be considered along with other significant requirements imposed on exchanges that do not apply to broker-dealers.¹⁷

Impact of D-Limit on Liquidity Takers

Various comments concern the potential impact of D-Limit on liquidity takers generally. Nasdaq alleges that the prospect of "quote fading" will reflect quotes that are not accessible and will harm overall market quality, and that D-Limit would make displayed liquidity less accessible for thinly-traded securities to parties other than just "latency arbitrageurs". Similarly, PTG suggests that both institutional and retail investors are likely to experience "increased quote fading" and declining fill rates.

Response:

Quote Accessibility/Quote Fading

As explained above, from the standpoint of any participant, an exchange quote is accessible only to the degree that the participant is able to send a message that can execute against the quote before someone else accesses it or the quote is canceled or changed before the taker's order arrives. For example, the FCA Study concluded that the typical "margin of victory" for participants that are competing to execute against a stale quote is 5-10 microseconds.¹⁸ Because of the multiple tiers of access that are sold by exchanges in the current market structure, it is necessarily true that exchange quotes are not equally accessible to all participants, and they are necessarily less accessible to investors than to other participants. Exchanges need to have the ability to innovate to address this basic issue, and D-Limit is one such innovation. The data IEX provided in the D-Limit Filing supports the premise that exchange quotes are only reliably accessible to participants using the fastest trading strategies and the fastest market information. Full-service and agency brokers trading on behalf of investors are not seeking to trade in the 0.02%-0.04% of the trading day captured by the CQI, nor do they have the means to do so. IEX data confirms that these participants are not trading in any material volume in these discrete moments. As explained below, these patterns are consistent across different categories of symbols, including less actively-traded securities, and in different trading conditions.

Thus, comments suggesting D-Limit will permit "liquidity fade" seem to imply that repricing will deprive investors or their agents of prices they otherwise would be able to access. IEX believes that, in fact, D-Limit will offer a new source of reliable liquidity for brokers and investors. All participants on IEX send orders through a single type of connection from a designated location, without the ability to pay for faster access. If D-Limit gives liquidity providers more incentive to provide displayed liquidity, then any

¹⁶ Note 13 and accompanying text, supra.

¹⁷ Securities Exchange Act Release No. 88008 (January 21, 2020), 85 FR 4726, 4734-5 (January 27, 2020).

¹⁸ FCA Study, note 4 supra, at 4.

investor seeking to trade in the 99.96% of the day when the CQI is off will have more opportunities to access liquidity on IEX, without the need to buy new low-latency tools.

In addition, in circumstances when the NBBO is in transition, quotes on exchanges that remain at the soon-to-be stale price will either be accessed first by a fast market participant, or they will be canceled before they can be executed by anyone. In either event, quotes on other exchanges will not be accessible in these moments to institutional investors, which are not seeking to trade in these moments. As explained by T. Rowe Price:

“Quote fading from D-Limit is less of a concern as the CQI is ‘on’ for only 0.02% of the trading day on a volume-weighted basis. More importantly, institutional order routing is even less impacted by D-Limit since institutional order ‘taking’ strategies are driven by a fundamental demand for liquidity and are not intentionally seeking to trade while the CQI is ‘on.’ Said more plainly, institutional orders on IEX typically occur before IEX’s systems predict a quote change is imminent – consequently, these orders will be able to access the liquidity they see before the CQI changes to ‘on.’ Rather, D-Limit seeks to limit reactive strategies used by a small subset of proprietary trading firms that invest in high speed infrastructure to predict price changes, leverage small latency advantages, and opportunistically trade against stale quotes.”¹⁹

Brokers’ Ability to Capture Liquidity in Market-Wide Sweeps

Some comments have questioned whether D-Limit would affect the ability of participants sending intermarket sweep orders (“ISOs”) to capture liquidity on IEX, and in particular, whether executions on other exchanges could trigger the CQI signal and reprice the IEX quote before the ISO arrives at IEX.

In general, IEX believes that brokers seeking to maximize their ability to capture liquidity on all markets (IEX and others) take account of geographical and other differences among exchanges, so that orders sent to some exchanges do not impede their ability to access liquidity on others, with the goal of maximizing fill rates on “market-wide sweep” orders. IEX submits that broker routing technology accounts for these differences today, and this question will not be affected by D-Limit, given that all orders and cancels will continue to be subject to the same speed bump that IEX has always had in place. More specifically, ISOs sent to IEX in the same manner in which they are sent today, accounting for IEX’s existing 350 microsecond speed bump, will result in a comparable fill rate. In other words, brokers should not experience reduced fills as a result of the CQI reacting to executions of orders sent to other markets if the brokers’ routing continues to account for IEX’s speed bump.²⁰

In fact, it is reasonable to expect that the experience for liquidity takers on IEX will be positively affected by an increase in displayed liquidity resulting from the additional protection to providers of liquidity

¹⁹ See T. Rowe Price Letter, note 4 *supra*, at 4.

²⁰ Certain anonymous letters have quoted from a press interview in 2016 concerning IEX’s D-Peg order type and why IEX decided not to offer a displayed version of that order type. While these comments are not relevant to the approval of this rule filing, for the reasons given above, IEX believes that broker routing has evolved such that brokers seeking to access displayed liquidity can and do route in ways that allow them to capture all available liquidity, and this will continue to be true and unaffected if D-Limit is approved. D-Peg is also a fundamentally different order type because it is designed to exercise discretion in most market conditions.

while the CQI is on. Even a small increase in the amount of displayed liquidity on IEX will increase the total volume of market liquidity and options available to brokers and investors that require immediate executions.

Decision to Not Distinguish D-Limit Orders in Market Data

Nasdaq also objected to IEX's proposal not to distinguish D-Limit from other limit orders on its market data feed: "Without this information, liquidity seekers would have no means of avoiding potentially fruitless interactions with D-Limit liquidity...."

For the reasons explained above, the overwhelming majority of liquidity seekers, including all investors, are not seeking to trade as part of a microsecond level latency arbitrage strategy,²¹ so they would have no particular need to identify D-Limit orders separately from others. On the other hand, IEX is concerned that this information could be used by counterparties for which it *would* be useful in a way that could undermine the purpose of the order type. For example, to the extent that a significant volume of D-Limit orders could be indicative of higher trading interest by "natural investors" in a particular symbol, this information could be exploited in making pricing or trading decisions that disadvantage those investors on other markets.

D-Limit as a Protected Quote

Some comments questioned whether D-Limit displayed quotes would or should qualify as "protected quotations" under Regulation NMS. These comments concern issues of fair access and also seek to distinguish pegged order types offered by other exchanges.

Questions of Fair Access

HRT notes that ISOs attempting to access D-Limit orders will be subject to IEX's 350-microsecond delay, whereas IEX can bypass the speed bump to update the price, and it argues that this is inconsistent with protected quote status. It argues that a firm's ability to update or cancel a quote on IEX today is subject to the speed bump on the same terms as a firm's ability to access the quote. It further points to language in the SEC's Automated Quotation Interpretation that the Commission would be concerned about delays that could be relieved based on the payment of fees, and it suggests that D-Limit would permit this practice.²²

PTG makes similar arguments and states that D-Limit, in combination with the speed bump, "impairs fair and efficient access to quotes" in conflict with Rule 611 of Regulation NMS. PTG also references data in the D-Limit Filing showing that almost no volume is executed when the CQI is active, which it interprets as meaning that quotes are "almost completely inaccessible in practice" in these periods. It references IEX data showing that 33.7% of all aggressive taking orders are received, and 24% of displayed volume is executed, while the CQI is active, and it suggests that this means a material percentage of overall trading activity will be impacted and unable to access displayed quotes. Similarly, the SIFMA Committee Letter questions whether D-Limit would be consistent with the Automated Quotation

²¹ T. Rowe Price Letter.

²² See 81 FR at 40792, n. 75.

Interpretation's statement that permissible delays should not impair the ability of participants to "fairly and efficiently access a quote, consistent with the goals of Rule 611." In the same vein, it questions whether D-Limit is consistent with Rule 602, the "Firm Quote Rule."

Response:

D-Limit is consistent with both the letter and spirit of the rules concerning protected quotations, which are focused on incentivizing displayed quotations by investors and providing fair and efficient access to investors.

When the Commission adopted Rule 611, it made quite clear that the Order Protection Rule was focused squarely on investors:

"By strengthening price protection in the NMS for quotations that can be accessed fairly and efficiently, **Rule 611 is designed to promote market efficiency and further the interests of both investors who submit displayed limit orders and investors who submit marketable orders.** Price protection encourages the display of limit orders by increasing the likelihood that they will receive an execution in a timely manner and helping preserve investors' expectations that their orders will be executed when they represent the best displayed quotation. Limit orders typically establish the best prices for an NMS stock. Greater use of limit orders will increase price discovery and market depth and liquidity, thereby improving the quality of execution for the large orders of institutional investors. Moreover, strong intermarket price protection offers greater assurance, on an order-by-order basis, to investors who submit market orders that their orders in fact will be executed at the best readily available prices, which can be difficult for investors, particularly retail investors, to monitor."²³

With regard to accessibility of D-Limit quotes, it is important to note that "accessibility" is a relative term based on who the market participant is. For example, when an exchange sells microwave services to some participants, the quotes posted by parties using those services become less accessible to participants relying on basic fiber cable technology to access them. The same could be said for any of the hundreds of data and connectivity combinations offered by exchanges today.

Based on the data provided in the D-Limit filing, it seems clear to us that D-Limit quotes will be *more accessible* to the vast majority of market participants than quotes on other markets, given that we support only one method of connectivity for trading and allow firms to connect only at a single point of presence. IEX's own experience in 2016 in routing orders to the New York Stock Exchange ("NYSE") demonstrated that routing using a standard FIX protocol, rather than a binary protocol specific to NYSE, resulted in a substantially lower fill rate due to both quote cancellation and quotes being accessed by participants using the faster method.²⁴ Many of the quotes were protected, but inaccessible at times to all participants using a FIX gateway, which we believe would include a substantial portion of the members.

In addition, as explained in the D-Limit Filing, "protected quotations" are limited to those that are "automated quotations" under Regulation NMS, which requires that they be "immediately accessible."

²³ 70 FR at 37505 (*emphasis supplied*).

²⁴ "A NYSE Speed Bump You Weren't Aware Of", avail. at <https://iextrading.com/about/press/op-ed/>.

The SEC has determined that the IEX speed bump is “de minimis” for these purposes because it is well within the existing geographic and other variances affecting different exchanges.²⁵ Because D-Limit does not create any additional delay in transmitting orders to access quotes, it is immediately accessible within this definition.

Further, IEX is not allowing any party to “bypass the speed bump” through the payment of any fee. In fact, as described earlier, other exchanges charge exorbitant sums for the ability to access quotes faster than other participants through (i) the privilege of trading in the exchange’s data center, (ii) the use of lower-latency connectivity options in those data centers, (iii) the use of faster trading protocols, and (iv) proprietary market data that is substantially faster than consolidated data feeds. All of these could be considered fees that are paid to bypass liquidity barriers that exist for everyone else who does not pay the same fees. And IEX is unique among exchanges in providing a single method and place of connecting for all members and a single trading protocol, and it does not charge for better access to its proprietary market data, to create as level a playing field as possible for all our members.

What is Fair and Efficient Access?

The argument by PTG and the SIFMA Committee Letter that D-Limit fails to provide fair and efficient access because quotes can be repriced without being subject to the speed bump fails because it incorrectly assumes that fair and efficient access is inconsistent with an exchange providing protection against latency arbitrage strategies. As discussed above, when the NBBO is in transition, displayed quotes today are only reliably accessible to parties that are able and willing to use such strategies. IEX does not enable any participant to gain speed advantages over others in any of the various ways that exchanges permit today. We are proposing, with D-Limit, to provide a very narrowly-crafted means of protection against strategies that are enabled by the tools sold by other exchanges. And this one single outpost of protection would uniquely help investors more than any other participants, because they are the least able to avoid the impact of these strategies.

Consider the irony. The SEC has made clear the reason it created a system for protected quotes is to reward investors for displaying liquidity, and to make sure they can access the best quotes in the marketplace. Instead, we have a regime where investors are routinely “run over” when they provide displayed quotes on exchanges, and they are at a disadvantage to get liquidity that is displayed.

D-Limit will not solve all these issues, but it is one step in the right direction. In the face of these facts, the PTG and the SIFMA Committee Letter in effect are arguing that the only quotes that could ever be protected are those that leave investors exposed. As the Council of Institutional Investors put it in their comment letter: “We believe it makes no sense to define as “protected” only quotes that provide investors no protection against speed trading strategies.”²⁶

Thus, D-Limit is specifically designed to level the playing field between providers and takers of liquidity in a way that benefits investors and brokers. D-Limit is also reasonably and narrowly-tailored to address

²⁵ IEX Approval Order, 81 FR at 41161-2.

²⁶ Letter from Kenneth A. Bertsch, Executive Director, and Jeffrey P. Mahoney, General Counsel, Council of Institutional Investors, to Vanessa A. Countryman, Secretary, SEC, dated February 11, 2020.

the conditions that inhibit lit trading. In doing so, it is fully consistent with both the letter and spirit of the obligation to provide “fair and efficient access”.

The Firm Quote Rule

The Firm Quote Rule obligates each broker-dealer quoting on an exchange to execute orders to buy or sell “presented to it” at a price equal to or better than its quoted price.

First, the rule expressly imposes obligations on quoting brokers, and the SIFMA Committee Letter does not specify how it believes the rule affects exchange obligations or order types. In the case of D-Limit, in contrast to other proposals that seek to extend discretion to brokers that provide resting orders, any potential for repricing lies exclusively with the exchange, and brokers have no discretion in this respect. By not providing any discretion to members to reprice a D-Limit order, IEX is upholding the obligation of its members to execute against the orders that are sent to access their quotes.

Second, as described above, IEX is unique among exchanges in providing a single method and place of connecting for all members and a single trading protocol, and it does not charge for faster access to its proprietary market data. In contrast, the sale by exchanges of various levels of connectivity and market data speeds effectively enables members purchasing the lowest-latency technology to place quotes that are “less firm” than others.

Third, the Automated Quotation Interpretation makes clear that the IEX speed bump does not conflict with IEX’s obligation to make its quotations “immediately accessible.” Because D-Limit does not give discretion to members to determine whether to reprice or cancel their quotes, IEX is in the same posture as other exchanges that automatically reprice certain orders in reaction to general market price changes.

For these reasons, IEX believes that its design, as augmented by D-Limit, will be as or more in accord with the Firm Quote Rule than existing practices elsewhere.

Comparison to Other Order Types

The D-Limit Filing compares D-Limit to various other “pegged” order types used by other exchanges, in that both involve automatic adjustments by the exchange in response to changes in market prices. PTG and Nasdaq both seek to distinguish these other order types. PTG objects that CQI “is not based on an objective fact (such as whether the NBBO changes)”, but instead is attempting to predict when the NBBO will change and that the CQI “is only as good as the algorithm written by IEX and may be wrong”. The SIFMA Committee Letter makes the same argument and asserts the ability to interact with pegged order types is not subject to a speed bump on the other markets.

Nasdaq asserts that its pegged orders are “accessible at displayed prices at any given time, whereas D-Limit prices may never be accessible at such prices.” It further asserts that pegged orders do not constitute “quote fading” because shifts are affected by, but do not themselves affect, the NBBO, and if a D-Limit order is alone at the top of the IEX book, repricing could cause the NBBO to change.

Response:

The comments misleadingly imply that a change in the NBBO is a single event at a single moment in time. In fact, when the NBBO changes from one price to another, this generally happens unevenly based on sequential changes in prices across individual exchanges, when the last exchange quoting at the previous price level communicates a quote update. In the case of pegged orders, the exchange will reprice the order based on its own calculation, viewing market data from other exchanges, that a change in the NBBO has occurred. Thus, if a buyer of stock sees a pegged order on Nasdaq to sell at \$10.02 per share and sends an order to access the quote at that price, but the exchange has repriced the order to \$10.03 (its view of the new NBBO) before the message arrives, the order will fail to execute, and the buyer has no assurance that it can ever acquire the stock at the previously-displayed price.

Thus, Nasdaq's pegged orders are not distinguishable from D-Limit orders in terms of their potential to reprice before a quote may be accessed at the originally-displayed price.²⁷ D-Limit quotes are subject to repricing by IEX based on its observation of objective factors set out in the CQI formula. In either case, the fact the reprice has occurred does not mean the originally displayed price is not "immediately accessible." As explained previously, D-Limit quotes are accessible for 99.96% or more of the trading day, which we believe makes these quotes more accessible to more participants than protected quotes on other exchanges. Pegged orders, like standard limit orders, are most readily accessible to participants that can react to market price changes faster than the party that posted the quote or the exchange where it is posted can adjust the price. The more meaningful distinction between standard pegged orders and D-Limit orders is that the former are designed to move in both directions, which limits risks to the user and also increases opportunities for executions, while D-Limit is only defensive in moving away from the NBBO. This distinction, however, has no bearing on the status of both types of orders as protected quotes.²⁸

PTG is correct that the CQI is only as good as the methodology and data sources that trigger it, but for that very reason, it is misleading to speak of whether it is "right" or "wrong". Instead, how accurately it predicts imminent quote changes will determine whether market participants find it to be useful.

In response to Nasdaq's comment that repricing could cause the NBBO to change, we note that certain exchanges, including Nasdaq, allow pegged orders to be pegged to "one increment" better than the NBBO, where the pegged NBBO does in fact set a new NBBO by jumping in front of other limit orders.

²⁷ In the context of the IEX exchange application, one commenter noted that there was no material difference between the IEX speed bump and the way that existing exchanges reprice resting pegged orders, noting that exchanges reprice pegged orders without being subject to latency associated with their order entry gateways. IEX Approval Order, 81 FR at 41156, citing Letter from Dave Lauer, Chairman, Healthy Markets Association, November 6, 2015.

²⁸ The SIFMA Committee Letter suggests that language in the Commission's approval order for an amendment to IEX's "primary peg order type" in early 2017, stating that the order type was non-displayed and therefore should not impact IEX's dissemination of a protected quotation, would be inconsistent with allowing D-Limit quotes to be displayed. The SEC order approving that change simply noted that the use of that specific non-displayed order type did not impact IEX's dissemination of a displayed protected quotation. It did not purport to establish conditions for which types of displayed orders could qualify as protected (see the Automated Quotation Interpretation) or reflect a prejudgment about D-Limit.

As another example, if limit orders at different exchanges are both pegged to the NBBO, when it is defined by another order that is alone at the best price, and that order cancels, the NBBO would then be defined entirely by pegged orders that reference each other.

In the case of D-Limit, it is important to note that the CQI references other markets and does not self-reference IEX. Therefore, the only instance in which a reprice of a D-Limit order could ever affect the NBBO would be one in which IEX was alone at the NBBO, worse prices on other markets changed in ways that triggered the CQI, *and* the reprice of the D-Limit order occurred before the IEX quote was either filled, canceled, or revised by the party that submitted it. IEX believes this type of “edge case scenario” is remote and would occur far less frequently than in the cases in which pegged orders can affect the NBBO today.

Comments Concerning Data Used to Support D-Limit

Significance and Interpretation of the Data

Certain comments questioned the significance of the trading data provided as support in the D-Limit Filing. PTG commented that the data showing the substantial losses that result when resting orders execute after the CQI fires, instead of demonstrating a deficiency in market structure, shows that there are risks and rewards to being a liquidity provider and that not every execution will be immediately profitable. Nasdaq referred to data showing that the top three takers of liquidity during a CQI took 55% of displayed volume during these time periods,²⁹ and it questioned whether it would be fair for IEX to discriminate against the other 45% of volume received during a CQI to address a problem with only three firms.

Response:

IEX believes PTG and Nasdaq are misreading the data and/or IEX’s interpretation of it. We think the question is not whether every trade by a liquidity provider is or should be profitable (trades can be unprofitable even if they avoid executions with parties using these strategies), but whether an exchange can reasonably reduce the impact of latency arbitrage strategies that operate as an unnecessary structural “tax” on liquidity providers. We believe that Nasdaq is misreading the 55% statistic to mean that only orders from the three firms represent arbitrage strategies. As explained in the D-Limit Filing, it seems clear that aggressive taking orders while the CQI is on are strongly correlated to latency arbitrage strategies, not just those from the top three takers.³⁰ The additional detail simply provides an indication of the concentration of this order flow among a small number of firms.

In addition, there are many structures in today’s market that distinctly cater to providers of liquidity at the expense of takers of liquidity. The “maker-taker” pricing system, in particular, which is employed by all the major exchange groups in their largest exchanges, pays providers of liquidity while charging takers. This form of “price fragmentation” is a blunt tool that disadvantages all takers, including institutional investors that have the need for immediate access to liquidity, to the benefit of providers. In contrast, D-

²⁹ See Eric Stockland, “A Deliberate Strategy”, Medium, December 17, 2019, avail. at <https://medium.com/boxes-and-lines/a-deliberate-strategy-bb8b0cff074b>.

³⁰ D-Limit Filing, 85 FR at 72001-2.

Limit is a narrowly-targeted solution that protects providers during those fleeting moments when information asymmetry creates an opportunity for latency arbitrage.

Moreover, in distinguishing between market makers and liquidity takers generally, it is important to note that market makers place thousands of orders on a continuous basis that aid in the price discovery function of our markets. A single tick in the E-mini S&P futures contract, for example, could trigger thousands of quote updates simultaneously. At the same time, latency arbitrage strategies, which do not contribute anything to public prices, may simultaneously send orders to “pick off” quotes in response to the same piece of critical information. Therefore, market makers are functionally unable to adjust thousands of quotes at the same speed as a firm conducting latency arbitrage is able to send a single order. If an exchange has no ability to make reasonable distinctions between these types of participants in these circumstances, exchanges will be unable to innovate in ways that reverse the steady decline in displayed liquidity witnessed over the last 10-15 years.

Completeness of the Data

In the D-Limit Filing, IEX provided trading data for September 2019. Nasdaq questions whether the statistics presented are representative of other time periods or volatile time periods. It also questions whether the data is consistent for thinly-traded or illiquid stocks that are subject to routinely high levels of volatility. Nasdaq also states that IEX does not indicate whether or to what extent CQI activates “mistakenly in circumstances where it should not do so.”

Response:

First, it is important to understand that the CQI signal is a probabilistic algorithm, and its benefit does not depend on its being infallible, which would be impractical. Its effectiveness derives from the fact that it predicts price changes within two milliseconds in a high percentage of cases. If it failed to do so effectively, it would fail to win adoption by market participants.

The results presented in the D-Limit Filing are consistent for the scenarios that Nasdaq questions. During the fourth quarter of 2019, based on IEX average-weighted volume, the CQI was on for 0.021% of the time during regular market hours, virtually the same as the 0.025% of the time it was on for September 2019.

IEX analyzed data for the fourth quarter of 2019 on the amount of time the CQI was on or “active” for stocks that had relatively lower average daily volume (“ADV”) and thus would be characterized as “thinly-traded” or inactive. As indicated in the table below, for this category of stocks the CQI was actually significantly less active than for stocks with higher ADV.

ADV Bucket	% of time on per day	% of Volume
(< 50k)	0.002%	1%
(50k to 200k)	0.003%	3%
(200k to 1M)	0.006%	13%
(1M+)	0.025%	83%
ALL	0.021%	100%

In considering less liquid stocks, it is important to understand that the CQI necessarily will fire less often than in the case of other symbols because there are fewer data points from which to draw in making predictions. As compared to all symbols, this means for those stocks, there will be less repricing of the orders, which directly counters the arguments that CQI would have a larger impact in those symbols. Accordingly, there is no basis for Nasdaq's assertion that D-Limit would impede access for thinly-traded or other stocks.

IEX also analyzed data for the fourth quarter of 2019 on the amount of time the CQI was on for stocks that were subject to relatively higher volatility. For purposes of this analysis, IEX compared the highest priced trade and lowest priced trade measured as a percentage relative to a stock's previous closing price as a proxy for the degree of that stock's volatility on that day. For stocks in the Russell 3000, IEX compared stocks with an average daily price range greater than 5% to those with an average daily price range of 5% or less. As indicated in the table below, for stocks subject to greater volatility, which tend to also be stocks that are more thinly-traded, the CQI was on less often than for stocks with lower volatility.

Symbol Bucket	% of time on per day	% of Index Volume
Russell 3000 >5% (higher volatility)	0.009%	19%
Russell 3000, <= 5% (lower volatility)	0.021%	81%

Finally, IEX compared CQI "on time" during December 2018 and during September 2019. Based on analysis of the closing prices of the Cboe Volatility Index ("VIX") during each time period, IEX believes that December 2018 was a period of relatively high market-wide volatility while September 2019 was a period of relatively less market-wide volatility.³¹ As indicated in the table below, while the CQI was on more often during December 2018 than during September 2019, the "on time" was nonetheless extremely low, corresponding to approximately 15 seconds per day per symbol on average during regular market hours. It should also be noted that, during periods of heightened volatility, *all stocks* experience more tick changes, leading to a slightly higher percentage of time the CQI is on.

Month	% of time on per day
December 2018	0.060%
September 2019	0.025%

This additional data addresses the Nasdaq comments and supports the conclusions that (i) the fraction of the trading day that the CQI is on is consistent in different time periods; (ii) the CQI is on for less of the trading day for thinly-traded securities compared to all securities; (iii) the CQI is on for less of the trading day for securities that experienced higher volatility than for lower volatility securities; and (iv) during a high volatility period, the period of time the CQI was on continued to be extremely low (about 15 seconds during the trading day).

³¹ During September 2019, the average value of the VIX closing price was 15.56 while during December 2018 this average was 24.95. See <http://www.cboe.com/products/vix-index-volatility/vix-options-and-futures/vix-index/vix-historical-data>.

See also the discussion below under “Questions Concerning Market Impact – Impact on Volatility”.

Questions Concerning Market Impact

Effect if Other Exchanges Adopt Similar Mechanisms

PTG asserts that the D-Limit proposal neglects to consider consequences for takers of liquidity that seek to execute large orders if multiple exchanges adopt similar mechanisms. It suggests that market resiliency could be impacted “if market-wide systemic quote fading is allowed.” Similarly, the SIFMA Committee Letter suggests that if one or other exchanges adopt similar mechanisms, this would “exacerbate the number of inaccessible quotes in the marketplace.”

Response:

Again, IEX believes that D-Limit quotes will be as, or more accessible, to the vast majority of participants, compared to protected quotes on other markets, for the reasons explained above.

With regard to the concern about other markets adopting similar mechanisms, PTG does not specifically identify what consequences it believes would occur, or what measures adopted by other exchanges would cause them to arise. In general, however, any exchange seeking approval from the SEC for a similar order type would need to make the case that its proposal is consistent with the Act and provide data to show that it is narrowly-tailored to protect the interests of investors and participants providing displayed orders, and SEC consideration would be subject to a public comment process with input from all affected stakeholders. IEX believes that any other innovations that can pass these hurdles would result in deeper and less fragile liquidity on those exchanges, to the benefit of all participants.

The SIFMA Comment Letter incorrectly connects the proportion of IEX quotes that are displayed to the number of times the CQI fires and suggests that quotes would be more inaccessible if other exchanges with more displayed quotes than IEX adopt the same mechanism. This reflects a basic misunderstanding of the order type, as laid out in the D-Limit Filing. The CQI reacts to general price changes in the market (but not changes on the IEX order book). How often the CQI fires has nothing to do with what proportion of orders are displayed or non-displayed, on IEX or any other exchange.

If other markets adopted a very similar mechanism, IEX does not believe this would result in more inaccessible quotes. More stable and deeper quotes would result in greater accessibility for more participants. The likely result is that fewer quotes would be accessible to latency arbitrage strategies of the type we have identified. If any commenters believe that fewer opportunities to use such strategies would impair fair and efficient markets, they should specifically explain how and why they think that result would occur.

Impact on Volatility

Nasdaq asserts without evidence that the use of D-Limit could exacerbate volatility, and that this effect would be amplified if other exchanges adopt order types similar to D-Limit and such quotes repriced at the same time across all exchanges. Nasdaq further states that it expects the CQI will be active more frequently or for longer periods of time for thinly-traded stocks that experience more volatility.

Response:

IEX believes there is no reason to think that D-Limit would contribute to volatility. As shown above, exchange quotes in general become more fragile in periods of high volatility. This is exacerbated to the extent that the potential for profits from latency arbitrage also increases in those periods. Further, the data described above shows that the CQI is on less for thinly-traded and more volatile stocks and is still on for a small fraction of the day (0.06% of the day) during periods of heightened volatility.

If D-Limit is successful, it will attract a more diverse set of participants, which will contribute more robust liquidity, including from “natural investors”, all of which should reduce, not increase, volatility. Further, because D-Limit will only reprice to one tick outside the NBBO, D-Limit quotes will be available to trade at a price closely related to the NBBO for as long as they are not canceled by the parties that submit them. Moreover, because IEX provides the same connectivity method and speed without charge to all members, compared to the variety of different options with different latencies on other markets, all liquidity providers will compete on a more similar footing. This should encourage a wider diversity of liquidity providers, which should help to dampen, not exacerbate, volatility.

Impact on Best Execution

Nasdaq asserts that if D-Limit is approved, routing to IEX would be inconsistent with best execution obligations, since other venues would offer “more reliably accessible quotations.” Further, it states that if best execution obligations lead participants to avoid sending liquidity taking orders to IEX, then the execution quality of IEX for liquidity providers would also suffer.

Response:

Nasdaq is in no position to provide best execution advice to brokers. For the reasons described above, D-Limit quotes would be equally or more accessible to agency and full-service brokers trading for themselves and customers, who are not seeking to capture microsecond-level price differences. As explained above and by commenters, exchange quotes are in general less “reliably accessible” to these participants. Institutional advisory firm AJO summarized well the challenges that are confronted by many market participants: “We experience quote fading every day on every other exchange. Even worse, as the IEX data suggests, latency arbitragers are front-running our liquidity-seeking child orders and taking the posted liquidity we seek before our orders arrive. This unnecessary intermediation is not an example of price discovery, it is a form of predatory trading that increases investor costs! It is also the very behavior that D-Limit seeks to combat.”³²

Brokers trading for clients will be obligated to assess liquidity on IEX alongside other venues in making their best execution determinations. If D-Limit succeeds in creating a new source of reliable liquidity, brokers will take that experience into account in their routing behavior. As stated by Jefferies: “[G]iven the past success of the signals utilized in D-Peg and P-Peg order types along with the investment that IEX

³² Letter from Sean Paylor, Trader, AJO, L.P., to Vanessa Countryman, Secretary, SEC, dated February 10, 2020, avail. at <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-6791509-208328.pdf>.

has made in their quantitative researchers we feel confident that this order type will deliver a superior execution quality versus comparable liquidity providing orders on other exchanges.”³³

Market participants can and should be the arbiters to decide whether innovations like D-Limit are useful, and Nasdaq’s speculation about its usefulness has no bearing on whether it meets the standards for approval under the Act.

Other Comments

Comparison to EDGA Proposal

Both PTG and HRT argue that D-Limit has the same drawbacks that they ascribe to the Cboe EDGA Exchange’s proposal to impose a four-millisecond speed bump on orders to take liquidity.³⁴ They allege that both would permit liquidity “fade”, allow users to “free ride” on price discovery elsewhere, and provide an advantage to users of the order type over takers of liquidity. The SIFMA Committee Letter asserts that if IEX offered D-Limit as an “unprotected” quote, the Commission would need to address concerns similar to those on the EDGA Proposal about how brokers would satisfy best execution obligations and how the order type should be included in the NBBO, calculation of Rule 605 statistics, mid-point values, and dissemination on the SIP.

Response:

There are many significant differences from the EDGA Proposal:

- First, it is specifically designed to be as useful for agency and full-service brokers as for high-speed market makers, without the need for any special technology tools or market data. The EDGA proposal would be most useful to participants that have the ability to change or cancel quotes within four milliseconds.
- D-Limit will operate deterministically, based on a transparent formula, and gives no discretion to the order sender in determining whether it will be repriced.
- D-Limit will operate to protect orders during 0.02-0.04% of the trading day and impact arbitrageurs sending “aggressive” taking orders only in these moments. In contrast, the four-millisecond delay proposed by EDGA would operate during the entire trading day and could impact all orders to take liquidity.
- The order type will not affect the determination of the NBBO, as discussed above.³⁵

Unprotected Quote

The comments on the complexities that would result from a D-Limit quote that is unprotected are at issue only if D-Limit existed as an unprotected quote. For all the reasons given above, we believe D-Limit

³³ Note 15, *supra*.

³⁴ See Securities Exchange Act Release No. 86168 (June 20, 2019), 84 FR 30282 (June 26, 2019) (“EDGA Proposal”).

³⁵ See T. Rowe Price Letter, comparing D-Limit with the EDGA Proposal.

fully qualifies as a protected quote, and for the reasons given, D-Limit will not adversely affect the determination of the NBBO or mid-point prices.

Concerns with CQI Fees

In reference to IEX's fee imposed on firms that send more than a threshold of their taking orders in a CQI ("CQI Fee"), HRT commented that they believe it is inappropriate for IEX to "impose punitive fees for predictive strategies that compete with IEX's price prediction features."

Response:

If D-Limit is successful at deterring latency arbitrage and becomes a significant source of displayed liquidity on IEX, it is likely revenues from the CQI Fee will decline. The Commission has previously permitted the CQI Fee, which is not at issue in this filing, to go into effect. As IEX described when it filed to impose that fee, its objective was not to raise revenue but to discourage these particular strategies on IEX.³⁶

Conclusion

IEX believes the record provides ample basis for the SEC to determine that D-Limit is both consistent with the Act and the Commission's own statements about its regulatory purposes. If no exchange is allowed to innovate in ways that constructively and narrowly address latency arbitrage strategies that cost investors billions of dollars per year, then our capital markets will be stuck in a pattern of declining displayed liquidity, less transparent trading, and increased frustration from investors and other participants.

In offering D-limit, IEX has created a very specifically designed tool that will benefit brokers, market makers, and most importantly, long-term investors. The breadth of supportive comment letters on D-Limit from all of these stakeholders shows the value of this innovation from a standpoint of overall market fairness and efficiency.

The SEC has a three-part mission: to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. We believe it is clear that D-Limit furthers all three aspects of this mission and should be promptly approved.

Sincerely,



John Ramsay
Chief Market Policy Officer, IEX

³⁶ See Securities Exchange Act Release No. 81484 (August 25, 2017), 82 FR 41446, 41448 (August 31, 2017) (SR-IEX-2017-27).

Ms. Vanessa Countryman

February 13, 2020

Page 21

cc: **The Hon. Jay Clayton, Chairman**
 The Hon. Robert J. Jackson Jr., Commissioner
 The Hon. Hester M. Peirce, Commissioner
 The Hon. Elad L. Roisman, Commissioner
 The Hon. Allison Herren Lee, Commissioner

Brett Redfearn, Director, Division of Trading and Markets
Christian Sabella, Deputy Director, Division of Trading and Markets
David Shillman, Associate Director, Division of Trading and Markets
Richard Holley III, Assistant Director, Division of Trading and Markets

Appendix A

Examples of Nasdaq Products Offering Asymmetric Advantages

Below are examples of asymmetric product offerings from multiple stages of the trading process: Logical Connectivity, Physical Connectivity, Market Data Consumption, and Co-Location.

Logical Connectivity

Market Data Ports

TCP ITCH Port	\$750 per port
Multicast ITCH (MTCH) - software	\$1000 per port
Multicast ITCH (MTCH) - software & hardware	\$2500 per port
DR Ports	FREE

Quoting Ports

QIX Ports	\$1200 per port
Unsolicited Message (UM) Port	\$1000 per port
DR Ports	FREE

Dedicated OUCH

Dedicated OUCH Server	\$5000 per month
Installation Fee	\$5000

Source: <http://nasdaqtrader.com/Trader.aspx?id=PriceListTrading2>

Physical Connectivity

Exchange Hand-Offs

Description	Installation Fee	Ongoing Monthly Fee
Fiber Connection to Nasdaq (10Gb)	\$1,000	\$10,000
Fiber Connection to Nasdaq (10Gb Ultra)	\$1,500	\$15,000
Fiber Connection to Nasdaq (40Gb)	\$1,500	\$20,000
Fiber Connection to Nasdaq (1Gb Ultra)	\$1,500	\$2,500
Fiber Connection to Nasdaq (1Gb)	\$1,000	\$2,500
1Gb Copper Connection to Nasdaq	\$1,000	\$2,500
Connectivity to Third Party Services		
Third Party Services Fiber Connection (10Gb Ultra)	\$1,500 ¹	\$5,000 ¹
Third Party Services Fiber Connection (1Gb Ultra)	\$1,500 ¹	\$2,000 ¹
Third Party Services Fiber Connection (1Gb Ultra or 10Gb Ultra for UTP only)	\$100 ¹	\$100 ¹
¹ Customers who only receive the UTDF and UQDF feeds (UTP Only) over their co-located hand-off(s) or direct connect(s) to Third Party Services may receive two free physical connections at no cost. Additional UTP Only connections may be purchased with an installation fee of \$100 per connection and an on-going monthly fee of \$100 per connection.		

Direct Circuit Connectivity

Description	Installation Fee	Ongoing Monthly Fee
Direct Circuit Connection to Nasdaq (10Gb)	\$1,500	\$7,500
Direct Circuit Connection to Nasdaq (supports up to 1Gb)	\$1,500	\$2,500
Direct Circuit Connection to Nasdaq (1Gb Ultra)	\$1,500	\$2,500
Optional Cable Router	\$925	
Per U of Cabinet Space*		\$150 ¹
Direct Circuit Connectivity to Third Party Services		
Third Party Services Direct Connection (10Gb Ultra)	\$1,500 ²	\$5,000 ²
Third Party Services Direct Connection (1Gb Ultra)	\$1,500 ²	\$2,000 ²
Third Party Services Direct Connection (1Gb Ultra or 10Gb Ultra for UTP only)	\$100 ²	\$100 ²
Optional Cable Router	\$925	
Per U of Cabinet Space**		\$150 ¹
¹ Fees are based on a height unit of approximately 1.75 inches high, commonly called a "U" space and a maximum power of 125 Watts per U space. ² Customers who only receive the UTDF and UQDF feeds (UTP Only) over their co-located hand-off(s) or direct connect(s) to Third Party Services may receive two free physical connections at no cost. Additional UTP Only connections may be purchased with an installation fee of \$100 per connection and an on-going monthly fee of \$100 per connection.		

Source: <http://nasdaqtrader.com/Trader.aspx?id=PriceListTrading2>

Market Data

Nasdaq TotalView

<u>Distributor Fees</u>		
Nasdaq Depth Data	Nasdaq, NYSE, and NYSE MKT Issues	Internal Distribution: \$1,500 per firm External Distribution: \$3,750 per firm <u>Direct Access</u> : \$3,000 per firm

Source: <http://www.nasdaqtrader.com/Trader.aspx?id=DPUSdata#tv>

Nasdaq Level 2

<u>Nasdaq Depth Non-Display (Direct Access Only)</u>	Nasdaq, NYSE and NYSE MKT Issues	1 to 39 subscribers = \$375 per subscriber 40 to 99 subscribers = \$15,000 100 to 249 subscribers = \$30,000 250 subscribers or more = \$75,000
<u>Nasdaq Depth Non-Display Platform</u>	Nasdaq, NYSE and NYSE MKT Issues	\$5,000 per Trading Platform (up to a maximum charge of \$15,000)

Source: <http://www.nasdaqtrader.com/Trader.aspx?id=DPUSdata#lt>

Nasdaq Basic

Nasdaq Basic— Enterprise License	Nasdaq, NYSE and Other Issues	\$365,000 for unlimited internal Professional (display only) usage* *(\$2 per user fee for usage over 16,000 via a controlled display device)
Nasdaq Basic— Broker Dealer Enterprise License	Nasdaq, NYSE and Other Issues	\$100,000 per broker dealer electronic system

Source: <http://www.nasdaqtrader.com/Trader.aspx?id=DPUSdata#db>

Co-Location

Cabinets

Description	Installation Fee	Ongoing Monthly Fee
Super High Density Cabinet (>10kW - <=17.3kW)	\$4,500 ¹	\$8,000 ²
High Density Cabinet (>7kW - <10kW)	\$3,500	\$4,500 ²
Medium-High Density Cabinet (>5kW - <=7kW)	\$3,500	\$3,500 ²
Medium Density Cabinet (>2.88kW - <=5kW)	\$3,500	\$2,500 ²
Low Density Cabinet (<=2.88kW)	\$3,500	\$2,000 ²
Half Cabinet		\$2,000 ³

¹ Includes larger cabinet (30" W x 48" D x 96" H). Standard installation fee of \$3,500 would apply if smaller cabinet (24"W x 42"D x 84"H) is requested.

Note: Cabinet power cap is based on the available power at 80% of the breaker capacity of all circuit pairs within a cabinet (where a primary/redundant circuit pair is considered a single circuit).

² Discount of 15% of fee available to users of 25 or more full cabinets who commit to a 3 year term; Discount of 10% of fee available to users of 25 or more full cabinets who commit to a 2 year term.

³ Not available to new subscribers.

Source: <http://nasdaqtrader.com/Trader.aspx?id=PriceListTrading2>