

[ORAL ARGUMENT NOT YET SCHEDULED]

No. 20-1424

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Citadel Securities LLC,
Petitioner,

v.

Securities and Exchange Commission,
Respondent,

Investors Exchange, LLC,
Intervenor

On Petition for Review of an Order
of the Securities and Exchange Commission

BRIEF AMICUS CURIAE, BY CONSENT, OF BETTER MARKETS, INC.
IN SUPPORT OF RESPONDENT AND INTERVENOR

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CORPORATE DISCLOSURE STATEMENT

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and D.C. Circuit Rule 26.1, Better Markets, Inc. (“Better Markets”) states that it is a non-profit organization that advocates for the public interest in the financial markets; that it has no parent company; and that there is no publicly-held company that has any ownership interest in Better Markets.

**CERTIFICATE AS TO PARTIES,
RULINGS, AND RELATED CASES**

I. PARTIES AND AMICI

All parties to this case are listed in the Brief for Petitioner. Better Markets is not aware of any *amici* supporting Respondent other than those listed in the Brief for Respondent. Better Markets understands that Healthy Markets Association and XTX Markets LLC intend to file amicus briefs in support of Respondent Securities and Exchange Commission and Intervenor Investors Exchange, LLC.

II. RULINGS UNDER REVIEW

Reference to the ruling under review appears in the Brief for Respondent.

III. RELATED CASES

Reference to consolidated cases pending before this Court, if any, appear in the Brief for Respondent.

Dated: April 12, 2021

/s/ Stephen W. Hall

Stephen W. Hall

Counsel for Better Markets

CERTIFICATION OF CONSENT
FROM ALL PARTIES AND THE NEED
FOR SEPARATE BRIEFING

In accordance with Federal Rule of Appellate Procedure 29(a)(2) and D.C. Circuit Rule 29(b), undersigned counsel for Better Markets certifies to this Court that counsel for all parties have consented to the filing of this brief.

Pursuant to D.C. Circuit Rule 29(d), undersigned counsel for Better Markets certifies that this separate brief is necessary. Better Markets offers a unique perspective in this case. To Better Markets' knowledge, it is the only amicus focused exclusively on the public interest, as it has no commercial or financial interest whatsoever in the outcome of this case. Rather than approaching the issues presented from the viewpoint of a financial market participant with commercial or business interests, Better Markets approaches it from the perspective of an organization seeking regulatory outcomes that promote market transparency, market integrity, and, ultimately, the protection of all investors. This separate amicus brief, focused primarily on achieving the right outcome from a broader public interest perspective, is therefore necessary and appropriate. Moreover, the focus of each amicus brief filed in support of respondent SEC and intervenor Investors Exchange, LLC appears to be distinct, with little if any overlap in the arguments.

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GLOSSARY

APA	Administrative Procedure Act
Better Markets	Better Markets, Inc.
Final Release	Self-Regulatory Organizations; Investors Exchange LLC; Order Approving a Proposed Rule Change To Add a New Discretionary Limit Order Type Called D-Limit, 85 Fed. Reg. 54,438
IEX	Investors Exchange, LLC
IEX 19b-4 Filing	IEX Rule Filing Rule 19b-4 Under the Securities Exchange Act, SEC File No. SR-2019-15
IEX May 10 Letter	IEX Comment Letter Re: SEC File No. SR-IEX-2019-15 (May 10, 2020) (“IEX May 10 Letter”) at 4-6, https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-7169827-216633.pdf
Kelleher Testimony	<i>Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part II: Hearing Before the House Financial Services Committee, 117th Cong. (2021) (Written Testimony of Dennis M. Kelleher, President & CEO, Better Markets, Inc.)</i>
Signal	IEX’s crumbling quote indicator

IDENTITY AND INTEREST OF AMICUS¹

Better Markets, Inc. (“Better Markets”) is a nonprofit, non-partisan organization that promotes the public interest in the financial markets through comment letters, litigation, independent research, and public advocacy. It fights for a stable financial system, fair and transparent financial markets, and rules that protect investors from fraud and abuse. Better Markets’ sole objective is to advance the public interest through its advocacy, as it has no commercial or financial stake in any of the cases or causes in which it participates, including this one.

One of Better Markets’ primary goals is to eliminate the structural weaknesses and inequities in our securities markets. Those markets are increasingly fragmented, fragile, and unfair, as firms like Citadel and a handful of other privileged market participants enjoy clear and indefensible advantages by virtue of their high-frequency trading capabilities. Using ultra-high-speed computerized trading algorithms coupled with preferential data access—essentially

¹ In accordance with Federal Rule of Appellate Procedure 29(a)(4)(E), Better Markets certifies that (i) no counsel for any party authored this brief in whole or in part; (ii) no party or party’s counsel contributed money that was intended to fund preparing or submitting this brief; and (iii) no person—other than Better Markets, its members (of which there are none), or its counsel—contributed money that was intended to fund preparing or submitting this brief.

the right to see the cards held by all the other players at the table—these firms generate virtually guaranteed trading profits day in and day out. These predatory trading strategies continually pick the pockets of countless retail investors for reasons utterly divorced from fundamental analysis of corporate value and rational capital allocation. Their activities drive away retail investors from transparent exchanges; reduce liquidity and price transparency; and ultimately undermine confidence in the integrity of our stock markets.

This is a plague on our equity markets that prevents them from fully serving their intended purposes of helping entrepreneurs access capital and helping investors build wealth. These inequities must be addressed, and to that end, Better Markets has long advocated for reforms to prevent a privileged few market participants, such as Citadel, from profiting at the expense of the vast majority of investors, most of whom are hardworking Americans struggling to save for retirement and meet their other long-term financial needs. *See generally* Better Markets Advocacy on Market Structure Through the Years (Mar. 15, 2021), <https://bettermarkets.com/blog/better-markets-market-structure-advocacy-through-years>.

Better Markets has an interest in this case because a ruling in favor of Citadel will undermine rather than promote fairness, liquidity, and transparency in

our markets and thus impair their ability to function as intended. In creating the D-Limit order, IEX has developed a creative, effective, and narrowly-tailored remedy against predatory high-frequency trading firms engaged in latency arbitrage. The SEC rightly approved it, adhering to all of the principles governing rulemaking under the Administrative Procedure Act (“APA”). And the vast majority of established market participants strongly supported it. Yet Citadel now seeks to nullify IEX’s beneficial innovation, motivated by a desire to safeguard its profitable business model regardless of the heavy and ongoing cost to the broader public interest. Better Markets therefore seeks to defend IEX’s D-Limit order type and the SEC’s decision to approve it.

ARGUMENT

I. CITADEL ENJOYS UNFAIR ADVANTAGES OVER OTHER MARKET PARTICIPANTS.

Today’s securities markets are prone to abusive high-frequency trading practices due to their fragmentation, advances in computer trading technology, and current regulations that allow firms to exploit miniscule time delays embedded in the trading and price-quoting process. Citadel and a handful of other high-frequency trading firms spend vast sums to acquire sophisticated computer software, gain access to trading data ahead of other market participants, and acquire data feeds that supply them with non-public information. In addition, they

pay to attract order flow from other brokers, which fuels their trading strategies. As a result, they enjoy highly profitable advantages over other market participants.

A. Our Highly Fragmented Markets Facilitate High-Frequency Trading Strategies.

When investors want to place an order to buy or sell a particular stock, their brokers have a dizzying array of routing options. They can send orders to one of at least sixteen public exchanges, known as “lit” exchanges because they are the most transparent and highly regulated. *See Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part II: Hearing Before the House Financial Services Committee*, 117th Cong. App’x C (2021) (Written Testimony of Dennis M. Kelleher, President & CEO, Better Markets, Inc.) (“Kelleher Testimony”) <https://bettermarkets.com/sites/default/files/Kelleher%20HFSC%20Testimony%20GameStop%20Hearing%203-17-2021%20FINAL%20%282%29.pdf>. Each of these exchanges publicly displays the current best buy and sell prices for securities, and they are required to send that pricing information to a data feed that is publicly available on a non-discriminatory basis. This pricing data determines what are deemed to be the current “national best bid” and national best offer (collectively the “national best bid/offer”) for any particular stock. These exchanges also must “accept the most competitive ‘bid’ or ‘offer’ price posted at *any* trading venue.”

City of Providence, Rhode Island v. Bats Glob. Markets, Inc., 878 F.3d 36, 41 (2d Cir. 2017) (emphasis added). IEX is one of the lit or transparent exchanges.

Brokers can also send orders to one of over 30 “alternative trading systems,” each known as an “ATS” or “dark pool.” Dark pools, as indicated by the name, are less transparent than public, lit exchanges. Their prices are not publicly available and they do not contribute to the public data feed that informs the national best bid/offer. Dark pools are less regulated than lit exchanges, and they are attractive to investors or traders who worry that on lit exchanges, other traders—high-frequency trading firms in particular—may “pick off” their orders at inferior prices. Regulation of NMS Stock Alternative Trading Systems, 83 Fed. Reg. 38,768, 38,853 (August 7, 2018) .

Finally, brokers may send orders to one of at least seven high-frequency trading firms, also known as “internalizers,” such as Citadel. High-frequency trading firms may execute orders against their own inventory, *i.e.* internalize the orders, or they may route the orders to a dark pool or exchange. Internalizers are subject to comparatively little regulation. *See* Kelleher Testimony, App’x C.

B. High-Frequency Trading Firms Rely Upon an Incomplete and Inaccurate National Best Bid/Offer, the Official Benchmark for Securities Pricing.

One important consequence of this market fragmentation, and particularly the different regulatory treatment of the different venues to which orders may be routed, is that, despite its name, the national best bid/offer is not necessarily the actual best prevailing price for any particular stock. Jonathan Macey & David Swensen, *Recovering the Promise of the Orderly and Fair Stock Exchange*, 42 J. CORP. L. 777, 785 (2017) (“Most obviously, trades made in dark pools and internalized by [high-frequency traders] do *not* feed into the [national best bid/offer]. Registered exchanges are required to provide the [national best bid/offer], which are the best bids and offers on the Consolidated Quotation System (CQS). The non-exchange alternative trading systems, which include dark pools, may have better prices, but they do not have to provide quotes to the CQS, only match trades within the [national best bid/offer].”). Since nearly half of all trades are executed in these off-exchange venues, the national best bid/offer cannot reflect the truly best prevailing bid or offer, as it simply does not reflect a significant volume of trading. Kelleher Testimony at 15-16.

A perhaps less obvious reason the national best bid/offer does not necessarily reflect the actual prevailing best bid or offer has less to do with the

laws governing securities than the laws governing nature: Even digital information cannot be conveyed instantaneously, but takes time to travel, bounded by the speed of light in a vacuum. *See* Albert Einstein, *Relativity: The Special and General Theory* 22 (Robert W. Lawson, Trans. 1920). Small increments of time pass while the information in an order proceeds from a public exchange to the consolidated feed, the information is compiled and analyzed, and the national best bid/offer is displayed. As explained below, this delay in the formulation of the national best bid/offer, albeit fleeting, can be exploited by high-frequency traders for enormous gain.

C. Firms Like Citadel Profit From the Latency Caused by Market Fragmentation at the Expense of Actual Investors.

The unavoidable delay between the moment an order is transmitted to a public exchange and the moment that order is reflected in the national best bid/offer provides a nearly certain profit opportunity for any traders—the high-frequency traders—that are able to access pricing data faster than the data is reflected in the consolidated data feed and, accordingly, the national best bid/offer. Alexander Abedine, *The Symbiosis of High Frequency Traders and Stock Exchanges: A Macro Perspective*, 14 N.Y.U. J.L. & BUS. 595, 607 (2018) (“The system created by Rules 603 and 611, in other words, enables [high-frequency

traders] to construct the [national best bid/offer] before ordinary retail and institutional investors.”).

For example, suppose the national best bid, as reflected in the national best bid/offer for a stock is \$10.05, and an order comes into the New York Stock Exchange at \$10.06. Eventually, the national best bid/offer will show that the new national “best” bid is \$10.06. But, as explained above, there is a delay or a latency between when this bid is entered on the NYSE and when it is actually reflected in the national best bid/offer. Anyone who knows about the order for \$10.06 on the NYSE can essentially guarantee themselves a profit during that period of latency, by buying the stock at the now stale “best” bid of \$10.05 before the price moves up to \$10.06, and then selling it once the national best bid/offer is disseminated. This strategy is known as “latency arbitrage.” And on the other side of every latency arbitrage trade, of course, is someone who has lost money, because they sold a stock at a stale price of \$10.05 when that stock was inevitably moving—in essence, already had moved—to a higher price.

The profit (and loss) resulting from this scenario has nothing to do with any specialized investment insight or skill. It is, rather, a form of free-riding. *Cf.* Gaia Balp & Giovanni Strampelli, *Preserving Capital Markets Efficiency in the High-Frequency Trading Era*, U. ILL. J.L. TECH. & POL'Y, Fall 2018, at 349, 362 (noting

that high-frequency traders use strategies, such as latency arbitrage, which allow them to “free ride” on information developed by “research investors”); Macey & Swensen, *supra*, at 781 (“this market fragmentation harms long-term investors by allowing [high-frequency traders] to free-ride on the costly investments in research made by real investors”). In other words, the person who profited did not profit because of superior acumen in the field of investments, economics, business, or finance, or any other skill typically associated with making money in the stock market. The person is actually indifferent to whether the “correct” value of the stock is \$10.05 or \$10.06. Macey & Swensen, *supra*, at 787 (noting that conducting “fundamental research on stocks . . . is irrelevant to [high-frequency traders]”).

If a participant has the technological capacity to “see” the NYSE price and trade on it before it is reflected in the national best bid/offer, and further has the financial capacity to actually buy the stock, profiting in this situation requires no more insight or savvy than the ability to discern that 10.06 is a bigger number than 10.05. Moreover, if stocks were traded on just a single national exchange, such a strategy could not be profitable, as it relies on the ability to exploit price differences on multiple exchanges before they are reflected in the national best bid/offer.

D. High-Frequency Traders Rely on Informational and Technological Strategies to Gain Advantage.

Successfully deploying a latency arbitrage strategy is easier said than done, chiefly because of technological and financial hurdles that only a privileged few high-frequency traders, such as Citadel, can overcome. Steven McNamara *The Law and Ethics of High-Frequency Trading*, 17 MINN. J.L. SCI. & TECH. 71, 103–04 (2016) (“While such amounts may be affordable to a [high-frequency trading] firm paying them, they would be prohibitive for a retail investor, even if such individual had the technical wherewithal to take advantage of a co-located position.”).

First, to engage in latency arbitrage, a trader must be able to see price changes on exchanges before they are reflected in the national best bid/offer. This requires connectivity to the exchanges that enables a trader to see price changes in the milliseconds between the moment they occur and the moment they are captured in the national best bid/offer. Conveniently for high-frequency traders, exchanges sell services, including “co-location” services, which allow traders to set up their equipment in close physical proximity to the exchange’s own facilities, thus reducing the time it takes for information to reach them from the exchange—a head start, in effect. Exchanges also offer a number of other superior connectivity options, such as faster fiber connections, that also enable pricing information to

reach the user more quickly than it reaches the consolidated data feed. Fees for any one of these connectivity services can amount to tens of thousands of dollars per month.

But this is not all. High-frequency traders also purchase access to a significant amount of other valuable trading data. For example, exchanges sell proprietary data feeds with “depth of book data,” which, as its name implies, contains significantly more information than the “top of book” core data, *i.e.* the current best bids and offers that feed into the publicly available consolidated data feed. This includes resting limit orders, cancellations, and other data that is extraordinarily valuable because it provides superior insight into the state of the market and likely price movements, information that is unavailable to investors reliant on the consolidated data feed alone. *NASDAQ Stock Mkt., LLC v. Sec. & Exch. Comm'n*, 961 F.3d 421, 424 (D.C. Cir. 2020) (“This data allows a trader to gain background information about the ‘liquidity’ of a security on a particular exchange, *i.e.*, the degree to which his total sale or purchase price will differ from what he would receive if the entire trade were made at the prevailing best prices.”) (internal quotation marks omitted).

High-frequency traders purchase both connectivity services and depth of book data from multiple exchanges to ensure they have superior access and

information, which increases the already prohibitive cost. *See In the Matter of the Application of Sec. Indus. & Fin. Markets Ass'n for Rev. of Action Taken by Nyse Arca, Inc., & Nasdaq Stock Mkt. LLC*, Release No. 84,432 (Oct. 16, 2018) (explaining that investors who want to take advantage of depth of book data typically need to purchase data from multiple exchanges).

High-frequency traders make yet additional outlays to fuel their trading strategy. As noted above, high-frequency traders may execute orders routed from brokers. Brokers do not, however, pay high-frequency traders for this service. Instead, high-frequency traders pay brokers for the privilege of executing brokers' client trades. Why? Because, similar to depth of book data, this retail order flow provides significant information about the state of the market and potential price movements. Ultimately, access to this data increases high-frequency traders' latency advantage—with it, not only are they able to see that the national best bid/offer no longer reflects the actual best price, but are also able to discern, with a high degree of certainty using proprietary algorithms, that a price change is likely to occur even before that change is reflected in any exchange's order book. *Abedine, supra*, at 624 (2018) (“The depth of the data acquired and the speed at which [high-frequency traders] can analyze and act upon that information permits [high-frequency traders] to model the behavior of retail and institutional investors

fractions of a second before such investors act, and allows [high-frequency traders] to model short-term price movements millions of times each day.”)

E. The Latency Arbitrage Strategy Is Costly But Almost Invariably Profitable.

High-frequency traders spend enormous sums to acquire these advantages. One study estimated that exchanges received \$1 billion in revenue in 2018 from high-frequency traders and others for selling access to enhanced connectivity and non-public data. Eric Budish, Robin S. Lee & John J. Shim, Financial Conduct Authority, *A Theory of Stock Exchange Competition and Innovation: Will the Market Fix the Market?* 4 (Jan. 2020), (“FCA Study”). Similarly, payments to brokers for order flow from high-frequency traders and others totaled \$2.6 billion in 2020. Kelleher Testimony at 10. And this does not account for the various other expenses associated with running a business of this type.²

The implications are twofold. First, these high costs create barriers to entry in the high-frequency trading field, limiting competition and safeguarding their privileged and profitable position.

² For a firm like Citadel, this includes expenses such as a \$22 million monetary penalty paid to the SEC for misleading brokers about its practice of front-running the customer orders receives from brokers, Press Release, SEC, *Citadel Securities Paying \$22 Million for Misleading Clients About Pricing Trades* (Jan. 13, 2017), <https://www.sec.gov/news/pressrelease/2017-11.html>.

Second, the magnitude of these costs, and firms' willingness to incur them, signify the enormous profitability of latency arbitrage. It is as close to a riskless strategy as one can find in the equities markets. *Cf.* Yesha Yadav, *Insider Information and the Limits of Insider Trading*, 56 WASH. U. J.L. & POL'Y 135, 146 (2018) (noting that high-frequency trading firm Virtu's IPO filing revealed that its strategies "had resulted in the firm enjoying a near flawless winning streak over four years of operation, losing money on just *a single day* during this period") (emphasis added). Indeed, a latency arbitrage strategy is specifically designed to *avoid* assuming market risk for any period longer than the blink of an eye—if that. Yadav, *supra*, at 146 (2018).

Estimates of high-frequency trading profits are elusive, in part because companies like Citadel are not public and their revenue streams and sources are not transparent. However, if a relatively few high-frequency trading firms are collectively paying several billion dollars for connectivity, proprietary data feeds, order flow, and the other ingredients necessary to turn a lot of money into even more money, it stands to reason their profits exceed those billions of dollars in outlays by a significant margin. Keller Testimony at 10.

II. PREDATORY LATENCY ARBITRAGE PRACTICES HARM INVESTORS AND THE MARKETS THEMSELVES.

Latency arbitrage strategies are doubly harmful. They take money from the pockets of countless investors every trading day, money that is in no sense fairly earned. And in addition, they motivate many sophisticated investors such as pension funds to take their trades elsewhere, typically to a dark pool where they are less likely to suffer the predations of the high-frequency traders. As a result, the exchanges are losing volume, liquidity, and price transparency.

A. Investors Suffer Losses at the Hands of High-frequency traders.

The billions of dollars that high-frequency traders must spend to engage in a latency arbitrage strategy, plus the profits the high-frequency trading firms reap, must come from somewhere. Stock trading is a zero-sum game—one party's profits come at the expense of the counterparty's losses. Merritt B. Fox et. al., *The New Stock Market: Sense and Nonsense*, 65 DUKE L.J. 191, 202 (2015). And who are the counterparties suffering billions of dollars in losses that turn into enormous profits for high-frequency traders?

The answer is clear: Every other participant in the stock market, including, significantly, retail investors who participate directly by trading on their own behalf through brokers, or indirectly through pension funds and other institutional investors. *See, e.g.* Comment Letter from Council of Institutional Investors Re: File

No. SR-IEX-2019-15 (Apr. 23, 2020) (expressing support for the D-Limit order because it will prevent investor orders from getting “picked off” by latency arbitrage strategies), <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-7108476-215909.pdf>. These are everyday people, many of them saving for a retirement, a house, or a college education for a child. They, on their own or through their advisers, make judgments about the long-term value of public companies, and allocate their capital on that basis. And unlike the Citadels, they assume the risk of loss, along with the prospect of gain, unaware that one risk they face is predatory high-frequency trading. *Cf. Yadav, supra*, at 978 (“Studies note that informed investors consistently suffer losses to [high-frequency] traders.”). High-frequency traders profit from latency arbitrage strategies, while investors suffer harm.

The aggregate dollar cost to investors inflicted by latency arbitrage strategies, although difficult to calculate precisely, is clearly substantial. A recent study by the UK’s Financial Conduct Authority indicates that latency arbitrage engaged in by firms like Citadel may cost investors in the aggregate \$5 billion a year. FCA Study at 5.

B. Latency Arbitrage Also Harms the Markets.

Predatory latency arbitrage trading practices also inflict broader harms by discouraging trading, and particularly the use of resting limit orders, on the lit exchanges. When investors know that their resting orders can be picked off at stale prices by high-frequency trading firms with superior information and technology, they are incentivized to place those orders in dark pools. That diversion of trading volume in turn reduces liquidity and impairs accurate price discovery in the more transparent exchanges. The record is replete with testimonials from established institutional investors and asset managers to this effect.

III. THE RECORD SHOWS THAT IEX'S D-LIMIT ORDER MITIGATES THE HARMS ARISING FROM LATENCY ARBITRAGE.

As set forth above, it is clear that latency arbitrage strategies inflict a variety of serious harms on investors and the markets. The record in this case shows equally clearly that IEX's D-Limit order will mitigate those harms, without unintended consequences.

A. IEX Seeks to Offer a More Fair Trading Environment and the D-Limit Order Promotes That Goal First and Foremost by Protecting Investors in Displayed Markets.

IEX is an exchange that seeks to offer a more fair trading environment for all investors and traders, in short, a level playing field. It does so by neutralizing the technological advantages that high-frequency traders use to profit at the

expense of long-term investors.³ To that end, the Commission has already approved IEX's use, in tandem, of two innovations that frustrate latency arbitrage with respect to *non-displayed orders*. One is the "speed bump," a coil of wire totaling approximately 38 miles in length, through which messages to IEX must travel. See Don Bollerman, *A NYSE Speed Bump You Weren't Aware Of* (Jan. 16, 2020), <https://www.sec.gov/comments/10-222/10222-395.pdf>. Passing through this 38-mile coil adds about 350 microseconds to the time it takes for a message to reach IEX.

The other innovation is the crumbling quote indicator or "signal." The signal, using a proprietary formula developed by IEX, predicts when the national best bid/offer in a particular stock is unstable and may soon be shifting up or down. The speed bump and the signal address latency arbitrage strategies by creating a time period in which IEX can reprice stale orders before high-frequency trading firms can seize on them. The D-Limit Order type at issue here offers an additional benefit by protecting *displayed* limit orders from adverse selection during periods when the signal is on. See IEX Rule Filing Rule 19b-4 Under the Securities

³ In accordance with this overarching goal, IEX does not use rebates or maker-taker fees to attract trading volume, as those payment structures create conflicts of interest in relation to the duty of best execution. IEX therefore must strive to attract business "on the merits"—that is by ensuring that it offers a fair, transparent, and efficient trading venue. The D-Limit order is part of that effort.

Exchange Act, SEC File No. SR-2019-15 at 12 (Dec. 16, 2019) (“IEX 19b-4 Filing”), <https://iextrading.com/docs/rule-filings/SR-IEX-2019-15.pdf>.

The important role of limit orders in today’s markets, and the need to protect them against high-frequency trading abuses, bear emphasis. A “limit order” is an order to buy or sell a stock at a particular price or any other price that is more favorable. Limit orders not only serve investors’ specific trading objectives, they also generally benefit the market. Specifically, limit orders aid price discovery by providing insight into how many shares are available to buy or sell at specific price points. Arthur Levitt, *Best Execution, Price Transparency, and Linkages: Protecting the Investor Interest*, 78 WASH. U. L.Q. 513, 515 (2000) (“Limit orders serve a critical market function by helping reveal the supply and demand for a security. Essentially, they show how many shares of a particular stock customers are willing to buy or sell, and at what price.”). Relatedly, they also create liquidity and depth in a market, generating the beneficial confidence that transactions can, and will, actually occur at a variety of price points. Steven McNamara, *The Stock Exchange As Multi-Sided Platform and the Future of the National Market System*, 2018 B.Y.U. L. REV. 969, 979 (2018) (“This pool of liquidity is one of the central reasons for forming a stock market, as greater liquidity in a stock greatly increases its value to traders, who often wish to exit an investment quickly and at the highest

price available. A deep pool of liquidity makes it possible to do so. Not only does it signal a willing buyer at a pre-established price but depth of liquidity ensures that an individual's small purchase or sale will have a small-to-minimal effect on the prices of the remaining shares.”).

The overwhelming majority of each trading day, the D-Limit order functions as a regular limit order. According to IEX's submissions to the SEC, the signal is only activated, on average, for only 1.64 seconds per day per symbol, which translates to about 0.007% of the trading session. IEX 19b-4 Filing at 20. Thus, except for the possibility of a repricing during this extraordinarily small segment of time, an investor who has placed a D-Limit order for 1,000 shares at \$10 will see that order filled once 1,000 shares are on offer for \$10, or lower.

The cardinal innovation provided by the D-Limit order is that, if the signal indicates that the price of the stock is unstable at \$10 and trending down, *i.e.* that it may be imminently moving away from that price, the order will be automatically repriced to \$9.99. In other words, the order will no longer execute at a price of \$10, by virtue of the signal. It will instead execute at a price of \$9.99 or better, reflecting the actual market movement and protecting the investor from suffering adverse selection.

In short, latency arbitrage hurts investors in the most concrete way by taking money out of their pockets. When an order is picked off as a result of a latency arbitrage strategy, an investor receives a price that is less favorable than the price they could and should have received a split second later, a price that the stock was inevitably moving towards. As the D-Limit order protects against this predatory trading practice, it benefits investors.

B. The D-Limit Order Type Provides Other Benefits to the Public Markets

The D-Limit order type confers other benefits, beyond protecting investors from wholly unnecessary losses. Specifically, it promotes price discovery and liquidity by encouraging the use of limit orders. As noted above, limit orders are critical to both of these market functions. However, investors are less likely to post displayed resting limit orders if they know those orders are likely to be picked off by high-frequency traders with superior access to pricing information and the technology to act on that information. Protecting those orders from falling prey to high-frequency traders will incentivize investors to continue relying on limit orders.

Similarly, the D-Limit order type will encourage more trading on lit exchanges, rather than dark pools. Currently, sophisticated investors, such as pension funds, may choose to trade in dark pools where they have more choice as

to counterparty and more confidence that their orders are immune from predatory trading by high-frequency traders. The more that trading takes place on lit exchanges, the better for all investors, who will have superior access to pricing information.

Finally, the D-Limit order type will benefit markets simply by increasing confidence in the integrity of the markets, an essential attribute if they are to remain robust. As the result of a variety of severe market dislocations, from the 2008 financial crisis to the 2010 flash crash to the recent GameStop fiasco, confidence in our equities markets continues to suffer. In fact, a Better Markets poll found that a majority of voters feel the stock market is rigged against ordinary Americans in favor of powerful players like Citadel. *See* Jim Puzzanghera, *Poll Finds 64% of Voters Believe Stock Market is Rigged Against Them*, L.A. TIMES (July 17, 2014), <https://www.latimes.com/business/la-fi-wall-street-regulation-dodd-frank-poll-20140717-story.html>.

The American securities market will not remain the envy of the world if the average American does not feel they can invest in the market with confidence. The domino effect will be profound, as businesses seeking capital, as well as investors seeking to build wealth, both suffer, ultimately damaging the entire American economy.

IV. SEC CORRECTLY APPROVED THE D-LIMIT ORDER.

The SEC's approval of the D-Limit order was fully in accordance with the Exchange Act and the principles of agency decision-making under the APA and the applicable case law.

A. The Record Amply Supports the SEC's Findings Under the Exchange Act.

The Exchange Act conditions approval of an exchange rule upon SEC findings all keyed to serving the public interest, such as protecting investors and promoting just and equitable principles of trade. *See* 15 U.S.C. § 78f(b)(5). Based on a thorough record—containing more than “substantial evidence”—the SEC made all of the requisite findings under the statute, based upon the harm that latency arbitrage inflicts on investors and the markets; the ability of the D-Limit order to mitigate those harms; and its narrowly tailored design, which minimizes any undesirable collateral impact.

In support of these findings, the SEC was able to cite ample support from a remarkably diverse set of market participants, including a broad sampling of the most prominent institutional investors, asset managers, investment banks, and brokers in the world. For example, the Council of Institutional Investors explained that “Long-term investors are at real and substantial risk from speed advantages of a small number of trading firms that specialize in ‘agency arbitrage,’ which

imposes a multi-billion-dollar tax on institutional investors.” Self-Regulatory Organizations; Investors Exchange LLC; Order Approving a Proposed Rule Change To Add a New Discretionary Limit Order Type Called D-Limit, 85 Fed. Reg. 54,438, 54,440 n.60 (Sept. 1, 2020) (“Final Release”). And in support of its finding that latency arbitrage does far-reaching harm to the markets, the SEC cited to a variety of industry and public interest sources to the effect that “latency arbitrage negatively impacts liquidity and price discovery” and “reduces the willingness of both long-term investors and market makers to display quotes, to the detriment of price discovery and market efficiency.” Final Release at 54,442 & nn. 58-60 (quoting a variety of comment letters from established financial institutions).

The Exchange Act also separately provides that exchange rules may not “impose any burden on competition not necessary or appropriate in furtherance of the purposes” of the law. 15 U.S.C. § 78(b)(8). Here too, the SEC was able to make equally well-supported findings, well within the boundaries of the broad discretion that Congress afforded the agency in applying this provision.⁴ For

⁴ The legislative history behind similar language added to the Exchange Act in 1975 makes clear that Congress intended the standard to be flexible and the SEC’s manner of implementation to be afforded considerable deference. S. REP. NO. 94-75, at 13 (1975) (explaining that the SEC need not adopt the least anti-competitive regulatory approach, and its determinations are due no less deference than its expertise deserves in other matters).

example, rebutting the supremely ironic argument that the D-Limit order is anti-competitive, the SEC correctly found just the opposite, as it was born of private market *competition* and is aimed at correcting the intense *competitive imbalance* created by high-frequency traders: “The D-limit order is IEX’s competitive response to mitigate current competitive imbalances between liquidity providers and latency arbitrage takers.” Final Release at 54,451. In fact, and in the view of many market participants, it is Citadel’s predatory conduct that burdens competition: “[D]ozens of commenters that represent institutional traders and investors say they do not trade in this manner [exploiting latency arbitrage when the signal is on] and are unable to compete with the small number of firms that purchase the necessary systems, connectivity, and exchange proprietary market data” to do so. *Id.* at 54,446.

B. The SEC’s Approval Also Epitomized Rational Decisionmaking.

Finally, the SEC also acted in accordance with its duty under the APA, as interpreted by this Court and the Supreme Court. It considered all the “relevant factors” (and none that are off-limits under the Exchange Act); it drew “rational connections,” avoiding any clear errors of judgement; and it provided a lucid and

persuasive explanation for its action. *See generally Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

In that process, the SEC was entitled to credit the abundant evidence presented by IEX, by investor advocates, and by a wide variety of investors and brokers, that the D-Limit order type would benefit investors. And the SEC was further entitled to discount Citadel's self-serving and speculative assertions that the D-Limit order type would somehow harm investors. Nor, despite Citadel's assertion to the contrary, was the SEC required to predict with absolute certainty what the effects of approving IEX's D-Limit order would be. *See Lindeen v. Sec. & Exch. Comm'n*, 825 F.3d 646, 658 (D.C. Cir. 2016) ("We do not require the Commission "to measure the immeasurable") (internal quotes omitted). And the SEC's decision here, involving a highly technical issue, is due an added measure of deference by this Court. *Sorenson Commc'ns, LLC v. Fed. Commc'ns Comm'n*, 897 F.3d 214, 230 (D.C. Cir. 2018) ("Arbitrary-and-capricious review is generally deferential, but it is particularly deferential in cases such as this, which implicate competing policy choices, technical expertise, and predictive market judgments.") (internal quotation marks omitted).

Moreover, the SEC considered and addressed all significant issues raised by commenters, *see Home Box Office, Inc. v. F.C.C.*, 567 F.2d 9, 35 & n. 58 (D.C.

Cir. 1977), by confirming the threat to investors; reasonably concluding that the D-Limit order would not lead to quote fading; and highlighting the fundamental distinctions between the D-Limit order and the superficially similar but actually very different order type tendered by CboeEDGA, which the SEC had previously rejected.

For example, IEX presented ample evidence to the SEC that resting limit orders on its order book *were* suffering from adverse selection. IEX pointed out that while the CQI is only on for 0.007% of the trading day, between 20% and 33% of marketable orders are received during that brief period of time. The SEC calculated the odds of this happening by chance at 1 in 5,000. Final Release at 54,442 n.53. Moreover, IEX provided data demonstrating that resting limit orders that trade when the CQI is on experience loss (known as “negative price markouts”) in the second after the trade 74% of the time. When the CQI is off, only 34% of resting limit orders experience a negative price markup. The evidence of harm is unmistakable.

Citadel offered the implausible speculation that the large proportion of marketable orders that just so happen to arrive during the miniscule window of time when the CQI is on, that just so happen to hit resting limit orders, and just so happen to profit directly at the expense of those resting limit orders, are merely

orders from ordinary investors on an incredible run of consistent luck in taking advantage of price instability.

The SEC quite rightly rejected this self-serving argument. Instead it accepted the most straightforward, logical explanation for the data IEX provided. The reason such a relatively high proportion of marketable orders arrive during the relatively small periods of price instability, causing loss to the resting limit orders with which they interact and accruing profits for themselves, is that high-frequency traders like Citadel are in fact deploying their core trading strategy. While the SEC certainly has a duty to consider alternatives, *Nat. Res. Def. Council, Inc. v. Sec. & Exch. Comm'n*, 606 F.2d 1031, 1053 (D.C. Cir. 1979), that duty is limited to “reasonably obvious” alternatives. The SEC has no duty to credit pure speculation that the most rational and well-supported explanation *may* be wrong.

Perhaps in response to the primacy of investor protection as the metric for assessing the SEC’s approval of the D-Limit order, Citadel strenuously argued that the D-Limit order actually threatens harm to investors. Pet’r’s Br. 41-45. The SEC’s and IEX’s briefs (as well as IEX’s own letters in the record supporting the D-Limit order type), explain in detail why these arguments fail, as they lack any concrete support. Moreover, they lack credibility, as Citadel is hardly an investor advocate. It did not file this challenge out of the goodness of its heart or to protect

ordinary investors. It filed this challenge to protect its own pecuniary interest, which in this instance runs directly contrary to the interests of investors for whom it conveniently expresses solicitude. That is why investor advocates, such as Better Markets, and investors of all types consistently *supported* the D-Limit order. *See, e.g.,* IEX Comment Letter Re: SEC File No. SR-IEX-2019-15 (May 10, 2020) (“IEX May 10 Letter”) at 4-6, <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-7169827-216633.pdf>.⁵

Ultimately, this challenge to the D-Limit order type is about protecting Citadel’s golden goose. Citadel spends a tremendous amount of money for superior speed, access, and information, allowing it in effect to see price changes before they can be seen by investors and to profit at the expense of those investors. As the

⁵ These arguments from Citadel are true to form. It has a lengthy track record of making arguments that purportedly serve investors’ interests, only to be proven wrong. For example, Citadel argued strenuously that approval of IEX’s application to be a national security exchange, with its speed bump, would harm investors. *E.g.* Citadel Letter Re: IEX Application to Become a National Exchange, at 7 (Nov. 30, 2015), <https://www.sec.gov/comments/10-222/10222-28.pdf>. But, IEX has proven to be good for investors and the public interest. Edwin Hu, *Intentional Access Delays, Market Quality, and Price Discovery: Evidence from IEX Becoming an Exchange* (SEC DERA Working Paper Series Feb. 7, 2018), https://www.sec.gov/files/07feb18_hu_iex_becoming_an_exchange.pdf. Similarly, Citadel vigorously opposed approval of the D-Peg P-Peg order types, which are similarly designed to protect investors. And yet, as investors urged, these order types were approved, and are widely used to beneficial effect. IEX May 10 Letter at 14-15, <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-7169827-216633.pdf>.

record shows, the D-Limit order type neutralizes these advantages and places all investors on a more equal footing with Citadel. The SEC correctly approved its use under the applicable Exchange Act standard, in furtherance of its duty to protect investors rather than safeguard the fundamentally unfair and anti-competitive business model of a market participant.

CONCLUSION

For the foregoing reasons, the petition should be denied.

Respectfully submitted,

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Dated: April 12, 2021

CERTIFICATE OF COMPLIANCE

In accordance with Federal Rules of Appellate Procedure 29(a)(4)(G) and 32(g), and D.C. Circuit Rule 32(e)(2)(C), I hereby certify the following:

This document complies with the type-volume limit of Federal Rule of Appellate Procedure 29(a)(5) because, excluding the parts of the document exempted by Federal Rule of Appellate Procedure 32(f), this document contains 6,495 words.

This document also complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type-style requirements of Federal Rule of Appellate Procedure 32(a)(6) because it has been prepared in 14-point Times New Roman font, a proportionately spaced, plain Roman typeface that includes serifs, using Microsoft Word for Office 365 MSO.

/s/Stephen W. Hall _____

Stephen W. Hall

Dated: April 12, 2021

CERTIFICATE OF SERVICE

I hereby certify that on April 12, 2021, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the CM/ECF system. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

/s/ Stephen W. Hall

Stephen W. Hall

Dated: April 12, 2021