



July 17, 2019

Via Electronic Mail rule-comments@sec.gov

Vanessa Countryman
Secretary
Securities and Exchange Commission
100 F Street NE Washington, DC 20549

Re: SR-CboeEDGA-2019-012

Dear Ms. Countryman,

XTX Markets appreciates the opportunity to comment in support of the proposal by the EDGA exchange to introduce a Liquidity Provider Protection (“LP²”). By way of background, XTX Markets LLC is a U.S. broker-dealer and an affiliate of XTX Markets Ltd. (collectively “XTX Markets”), an FCA authorized, London-based proprietary trading firm. XTX Markets is a quantitative-driven and regulated electronic market maker with global trading operations. We provide liquidity in equities, FX, Futures, Commodities, Options, and U.S. Treasuries. XTX Markets executes daily volume of approximately \$150 billion across all asset classes and geographies. XTX Markets is a strong advocate globally for fair and transparent markets and is committed to making markets more efficient and competitive, in part by advocating for policies that reduce barriers to entry. Based on our experience globally, and for the reasons that follow, XTX Markets believes EDGA’s LP² proposal will have the effect of enabling liquidity providers to narrow spreads and display larger size for the benefit of end investors while simultaneously reducing the barriers to entry for new liquidity providers who may have risk absorption appetite and unique pricing and time horizons.

I. Introduction

According to EDGA, the proposed LP² would consist of a delay mechanism that would subject all incoming executable orders that would remove liquidity from the EDGA book on



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entry to a 4 millisecond (4/1000 of a second) access delay. This delay mechanism would not apply to the placement, modification, or cancellation of passive orders that provide resting liquidity in the EDGA order book. The purpose of the delay mechanism is to neutralize speed, in millisecond time frames, as an inherent trading advantage. Liquidity providers will have a reasonable, but very short, time to update their quotes taking into account market activity on other venues and in other related instruments, thus ensuring that they need not trade at stale prices with counterparties engaged in latency arbitrage. As proposed, EDGA's top of book quotes would not be considered "protected" under Regulation NMS and as such no firm would be required to route orders to EDGA or otherwise honor those top of book quotes under the Order Protection Rule.

XTX Markets supports EDGA's proposal. XTX Markets believes that the race for speed in trading has reached an inflection point where the marginal cost of gaining an edge over other market participants, now measured in microseconds and nanoseconds, is harming investors. This can best be illustrated by the practice of latency arbitrage, which in today's market generally means using dedicated microwave towers to transmit order information from one location to another to trade the same or correlated financial instrument based on information that is a few milliseconds away from becoming available to all market participants. The extent to which latency sensitive firms will go to gain incremental microseconds of an edge over competitors has been well documented globally, including an HFT firm building a microwave tower between an exchange and a competitor's microwave tower¹, wire-tapping an exchange's internal network in order to receive market data faster², bribing an exchange's officials for preferential access to the exchange's matching engine³, violating an FX platform's rules by hooking up several servers to its platform at once, enabling the HFT firm to obtain market data ahead of other market participants⁴, and HFT firms being advantaged by exchange systems that provide private information about a fill on a futures trade before that market data is publicly disseminated.⁵

¹ <https://www.bloomberg.com/news/features/2019-03-08/the-gazillion-dollar-standoff-over-two-high-frequency-trading-towers>

² <https://meanderful.blogspot.com/2018/01/the-accidental-hft-firm.html>

³ <https://www.bloomberg.com/opinion/articles/2019-05-02/india-s-nse-pays-158-million-for-algo-trading-scandal>

⁴ <https://www.wsj.com/articles/SB10001424127887324624404578258123623534466>, "High Speed Dustup Hits Clubby Corner" (Jan. 22, 2013)

⁵ <https://www.wsj.com/articles/glitch-exploited-by-high-speed-traders-is-back-at-cme-1518431401>.

As noted by Professor Donald Mackenzie of the University of Edinburgh, the exchange groups' considerable and successful focus on reducing "jitter" (quasi-random fluctuations in processing times) on their exchanges means "even tiny speed advantages" have become incredibly important, such that "*in a particular market ... one HFT firm – or a small number of firms – may achieve an advantage in speed that's very hard and very costly for their rivals to overcome.*"⁶ These efforts result in a tax on liquidity providers that is passed on directly to investors. Liquidity providers need to price to the average toxicity of the order flow they interact with, and to the extent they are being adversely selected by latency arbitrage strategies they must widen their spreads to account for that possibility. This in turn increases the costs of trading for all investors accessing that market.

II. EDGA's LP² Proposal is Consistent with the Exchange Act of 1934

A. EDGA's LP² is not Unfairly Discriminatory

XTX Markets agrees with EDGA that its LP² proposal is not unfairly discriminatory under the Exchange Act of 1934 (the "Act") because:

- LP² reflects a targeted response to a known problem in today's market, and its implementation will reduce costs for the majority of market participants, enhance market quality in the form of better displayed prices and larger size, and lower the barrier to entry for new market making firms;
- EDGA would operate as an unprotected exchange, thereby eliminating the requirement for market participants to route orders there or otherwise honor its top of book quotes;
- The LP² delay mechanism protects all orders that add liquidity and not just orders from a subset of market participants; and further,
- The LP² delay mechanism is not targeted at a type of market participant; rather, it is targeted at a behavior – latency arbitrage. Certain participants may conduct more or less latency arbitrage, but these participants are themselves diverse and cannot be defined or grouped by one aspect of their overall trading activity; indeed, they do not even appear to self-define themselves as latency arbitrageurs and will typically adapt their businesses and activities to accommodate the specific market structure of each product and market.

⁶ <https://tabbforum.com/opinions/how-fragile-is-competition-in-high-frequency-trading/> (March 26, 2019) (emphasis added).

B. EDGA's LP² Promotes Just and Equitable Principles of Trade

As discussed below, XTX Markets also believes that EDGA's LP² proposal is designed to remove impediments to and perfect the mechanism of a free and open market and national market system, to promote just and equitable principles of trade, and, in general, to protect investors and the public interest as required by the Act:

- ***The EDGA LP² will reduce the indirect operational tax on end users of markets.*** If raw speed is the determining factor, any liquidity provider that is systematically outpaced will consistently trade at stale prices, as the fastest market participants observe quotes moving on one venue and race to hit quotes on another venue a few milliseconds before the liquidity provider receives the same market data and can react. In fact, even if the liquidity provider and the firm engaged in latency arbitrage are *equally* fast, due to exchange jitter one can expect that in 50% of attempts the firm engaged in latency arbitrage will successfully trade against the liquidity provider's stale price. The end result is that liquidity providers may be forced into an expensive arms race.

This is a classic prisoner's dilemma wherein participants are commercially obliged to participate in a negative-sum activity due to the participation of others. Liquidity providers are not charities and the significant operational expenditure incurred in becoming or remaining low latency – always relative to other participants and therefore relevant even at increasingly diminishing timescales – is ultimately passed on to long-term investors.

- ***The EDGA LP² will lead to tighter pricing and deeper books for end users.*** End users are hedging genuine exposures or making long-term investments and not reacting to millisecond-level external events, unlike those engaging in latency arbitrage. Any market maker on an all-to-all exchange has no idea with whom it will trade; it gets a mix of latency arbitrage flow and regular end-user flow.

The end-user flow is thus subsidizing the latency arbitrage flow because the spreads charged on a venue are determined by the average quality of flow on the venue. EDGA's LP² will normalize market data transport across all participants: If a market ticks in Chicago and a participant engaging in latency arbitrage is able to ship that data over to New Jersey (before a liquidity provider can), the EDGA LP² will give a liquidity provider the opportunity to see and incorporate that tick before a latency arbitrage strategy can trade against their stale price.

EDGA's LP² will make it harder for a latency arbitrage strategy to be successful and thus will encourage market makers to quote tighter and in larger size to

compete for and attract more flow from end users whose orders stem from genuine economic exposures rather than intermarket races.

- ***The EDGA LP² will reduce barriers to entry and encourage competition.*** If raw speed is a prerequisite for success in liquidity provision, any participants – including new entrants, that cannot afford such expensive infrastructure – cannot compete and will logically withdraw. This is detrimental, as such liquidity providers may well have risk absorption appetite, as well as unique pricing and time horizons. Removing these resting limit orders from the market entirely (because they systematically trade at stale prices each time a related market moves) reduces valuable liquidity.
- ***The EDGA LP² will increase diversity and reduce systemic risk.*** Latency-sensitive markets tend to have heavily concentrated market share among a small group of extremely fast participants. This leads to systemic risk, as a small number of HFT firms have limited risk absorption capabilities in relation to their outsized market share, and the failure or operational interruption, even if brief, of such an entity would have a disproportionate adverse impact on the market and liquidity relative to its size.

Reducing the focus on minor speed advantages encourages more competition and a wider group of participants which will deepen the risk absorption capacity of the overall market.

C. XTX Markets Supports Setting the Delay Mechanism at 4 Milliseconds

XTX Markets further supports EDGA's decision to set the LP² delay mechanism at 4 milliseconds and to voluntarily forgo order protection. Price discovery in U.S. equities is often driven by price changes in U.S. equity index futures contracts that trade in data centers in Chicago. Existing commodity fiber connections can transmit market data from Chicago to the New Jersey data centers that house the matching engines for the U.S. equities exchanges in approximately 7.75 milliseconds. In contrast, and as cited by EDGA, Quincy Data advertises one-way microwave transmission of market data between Chicago and New York of 4.005 milliseconds, and unquestionably proprietary networks exist that transmit market data faster than the rate advertised by Quincy Data. The 4-millisecond delay proposed by EDGA would neutralize the difference between commodity fiber connections and microwave networks (7.75 milliseconds - 4.005 milliseconds = 3.745 milliseconds). At the same time, no one should be forced to route an order to an exchange with an intentional delay mechanism such as EDGA's LP² and XTX Markets believes it is appropriate for EDGA's top of book to be displayed as a manual, unprotected quote on the SIP market data feed.

III. Rebutting the Arguments Opposing EDGA's LP²

XTX Markets recognizes that some market participants with vested interests in the status quo will oppose EDGA's proposal, and XTX Markets responds below to some of the arguments that will likely be made against EDGA's LP² proposal.

- ***Comparisons to 'last look' in FX.*** Some commenters will argue that EDGA's LP² is like last look in the FX markets. This is an erroneous and disingenuous argument, typically made by certain participants who conflate two entirely different topics. With last look, the liquidity provider knows about an incoming order, even if it is not ultimately filled, and can themselves choose whether to accept this order and worse, whether to "pre-hedge" or trade in front of the order collecting riskless profit. This is highly problematic because it leaks information, increasing market impact and, hence, last look has a deserved bad reputation.

In contrast, under EDGA's proposed LP², the liquidity provider has no knowledge of any order attempting to access the liquidity provider's quote until an execution occurs against that quote. Self-evidently, the information leakage associated with last look does not occur and harmful practices such as pre-hedging remain impossible.

- ***Arguments against additional complexity.*** All being equal, simpler is better because end users and their agents tend to react to complexity and change less efficiently than specialized high-frequency traders. The proliferation of order types in U.S. equities is a good example of complexity harming long-term investors. End users simply cannot devote whole teams to study each order type and are therefore disadvantaged relative to HFTs when placing orders. Some HFTs may even support the increased complexity because they are able to exploit more edge-case scenarios. It would be hypocritical for participants that have contributed to the proliferation of U.S. equity order types to object to EDGA's LP² proposal on the grounds of complexity.

As a principle it is entirely reasonable to aim for simplicity, but this must be considered alongside the benefits of innovation to long-term investors. Moreover, it is worth noting that as part of its LP² proposal, EDGA has proposed "to eliminate, or adjust the operation of, certain rarely used order types and instructions that could increase System complexity if offered alongside the proposed delay mechanism." Accordingly, EDGA as part of its LP² proposal is taking steps to *reduce* the complexity of its market.

- ***Arguments that EDGA's LP² could enable spoofing.*** Spoofing generally involves the placement and cancellation of non-bona fide orders on one side of the market to induce another market participant to trade at a manipulated price. This argument assumes that someone could use a latency mechanism to more easily cancel non-bona fide orders before they are executed. The fallacy with this argument is that the latency mechanism is not triggered by the receipt of the non-bona fide passive order, but by the receipt of the aggressive removing order. That aggressive removing order will arrive randomly, is not known to anyone while its going through the latency mechanism and may execute against a non-bona fide passive order with as much likelihood as on an exchange without an LP² latency mechanism.

Regardless, spoofing is illegal and accordingly exchanges have robust methods for detecting and punishing such activity. Such behaviour is subject to civil monetary sanctions and can be subject to criminal sanctions, which act as a material deterrent.

- ***Arguments that taking is a form of liquidity provision and end users' passive orders could miss out on valuable fills from aggressive latency arbitrage orders.*** End users' passive orders will only miss out on these fills if they have cancelled their orders. If that is the case, the only fills end users would miss out on due to EDGA's LP² are fills that would have instantly moved adversely against them because they would have been latency arbitrated. One can imagine a resting bid in a 10 x 12 market being filled in response to a related market crumbling to 6 x 8. Immediately post-fill, the end user's order looks to be off-market, having bought at 10 while the prevailing price is now 6 x 8. Had this end user 'missed out' on this fill because of EDGA's LP², it would be better off as it can now buy immediately at 8.

Incidentally, this form of "liquidity provision" is very common: multiple latency arbitrage strategies will compete to trade against these stale orders at the same time.

- ***Arguments that any delay whatsoever increases uncertainty and risk.*** Some market participants may argue that delaying the matching process on an exchange (even by a handful of milliseconds) is bad for the market as it hampers risk management, but this misses the point. That is absolutely true at extremes – imagine an exchange updating once an hour versus once per second – but current market structure has gone far, far beyond the point of diminishing returns.

If a liquidity taker is concerned about an increase in risk holding times of milliseconds, it ultimately is engaging in latency arbitrage, and not attempting to hold market risk.

- ***Arguments that EDGA's LP² will create an illusion of liquidity, which might lead to a lack of confidence in the accuracy and transparency of market prices.*** There will be no illusion of liquidity for end users trading on EDGA: What they see is what they will continue to get. EDGA's LP² specifically targets latency arbitrage, which no end user engages in when performing natural trading or hedging activity.

Price discovery on EDGA would indeed be slowed down by up to 4 milliseconds. This would have no material effect on end users of the market, however, who tend to have long-run economic exposures in the order of days, weeks and months and whose trading or hedging activity is not motivated by market developments at the millisecond timescale. Recall that we are talking about a quantum that is approximately one-tenth of the time it takes for light (and thus pricing data) to travel from, for example, a futures market in Chicago to an asset manager sitting at her desk in London.

- ***Arguments that fill rates will go down for buy-side clients.*** Natural liquidity consumers should expect to continue to experience high fill rates on EDGA because their consumption of liquidity is not driven by millisecond-level external events, unlike those engaged in latency arbitrage. Furthermore, they should expect tighter and deeper pricing.

Deeper pricing is extremely important because market structure is not static. In many markets such as equities, the buy side will outsource the routing of orders to broker smart order routing systems (SORs). Because the displayed size is often very small on lit equities venues, the SORs are forced to send multiple orders to multiple venues simultaneously.

With EDGA's LP² implemented, EDGA may instead solve the underlying issue: market makers may quote in sufficient size so that the SOR can fill its interest with one order on a single venue – preventing a firm engaging in latency arbitrage from observing one order and using its private microwave networks to rush to other venues and trade ahead of the others before they arrive.

IV. Mechanisms such as EDGA's Proposed LP² are not New or Novel

In recent years, exchange groups globally have increasingly recognized the damaging aspects the speed race has had on liquidity provision and have taken steps to neutralize those damaging effects. Thus, the introduction of mechanisms such as LP² are neither new or novel. Examples of similar protections in place for liquidity providers include:

- ICE Futures. In June 2019, ICE received CFTC approval for a 3 millisecond delay on incoming orders to remove liquidity in its Gold Daily and Silver Daily futures contracts.
- TSX Alpha (cash equities in Canada). TSX Alpha deploys a randomized 1-3 millisecond delay on all orders other than passive post only orders.
- Eurex (FX Futures). Eurex deploys an 8 millisecond speedbump for all orders other than passive post only orders.
- EBS Market (spot FX). EBS deploys a randomized 3-5 millisecond speedbump during which all orders are batched together, with the first order arriving triggering a start of a batch. During this period incoming orders and cancellations are batched and at the end of the period the cancellations are processed first before any orders are matched.
- Thomson Reuters Matching (spot FX). Thomson Reuters deploys a 3 millisecond speedbump during which all orders are batched together, with the first order arriving triggering the batch. At the end of the batch the cancellations are processed first before any orders are matched
- ParFX (spot FX). ParFX deploys a 10-30 millisecond speedbump.
- Aquis (European cash equities). Aquis prevents latency arbitrage on its market by banning proprietary trading firms from removing liquidity.
- IEX (U.S cash equities). IEX deploys a symmetric speed bump that delays all incoming orders and order messages by 350 microseconds. But, IEX also deploys an asymmetric feature to non-displayed passive orders that are pegged to the NBBO or midpoint of the NBBO. IEX will reprice these orders without delay if its proprietary algorithm indicates that the NBBO is about to change thereby protecting these non-displayed orders from latency arbitrage strategies.

- Nasdaq M-ELO (U.S cash equities). Non–displayed order type effectively subject to 500 millisecond speedbump.
- LME (Precious Metals) – commodity futures. On May 30, 2019, the LME received approval from the U.K. Financial Conduct Authority to implement a fixed delay to all orders other than cancelations in its precious metals contracts.
- Eurex (German and French single stock options). On June 3, 2019, Eurex implemented a 1 millisecond delay for German equity options and a 3 millisecond delay for French equity options, on all orders that would otherwise execute against a resting passive order.
- Moscow Exchange (USDRUB spot FX currency pair). On April 22, 2019, the Moscow Exchange introduced a 2-5 millisecond delay to all new order messages other than cancel messages.

Thank you for the opportunity for XTX Markets to provide its comments. As noted above, XTX Markets supports EDGA’s LP² proposal. XTX Markets believes it is consistent with the Act and, when implemented, will enable liquidity providers to narrow spreads and display larger sizes for the benefit of end investors. If you have any questions about our views, please don’t hesitate to contact me.

Sincerely,



Eric Swanson
CEO, XTX Markets LLC (Americas)

Cc: The Honorable Jay Clayton, Chairman
The Honorable Robert J. Jackson, Jr., Commissioner
The Honorable Hester M. Peirce, Commissioner
The Honorable Elad L. Roisman
The Honorable Allison Herron Lee, Commissioner
Brett Redfearn, Director, Division of Trading and Markets
Elizabeth Baird, Deputy Director, Division of Trading and Markets
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David Shillman, Associate Director, Division of Trading and Markets