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March 29, 2023

Vanessa A. Countryman
Secretary
Securities and Exchange Commission
100 F Street NE
Washington, D.C. 20549-1090
ELECTRONIC SUBMISSION in reference to File Number S7-31-22

Dear Ms. Countryman:

BestEx Research applauds the Securities & Exchange Commission (the "Commission" or "SEC") for developing a market structure rule proposal (File Number S7-31-22) intended to expose retail orders to exchange auctions. We believe such exposure will foster competition, reduce intermediation, increase transparency, decrease investor costs, and result in improved execution for both retail and institutional investors.

We commend the Commission for its intense focus on issues affecting the structure of equity markets, which are fundamental to our capital markets system. We share the Commission's goal of modernizing the rules that govern our markets and implementing processes that reduce both retail and institutional investors' transaction costs. We welcome opportunities in which all market participants have the ability to compete for order flow. Markets function best when there is open and fair competition for order flow.

BestEx Research is an independent algorithmic trading solutions provider that specializes in minimizing transaction costs for institutional investors via a multi-asset algorithmic trading platform combining execution algorithms, transparency and control over order execution, back-testing, and transaction cost analysis with execution consulting services. We provide our algorithmic trading solutions directly to buy-side institutions and to sell-side providers who sponsor our solutions for buy-side firms with the primary aim of reducing execution costs. The firm has built, delivered, and continues to enhance the industry's first independent, multi-asset algorithmic software platform that is high-performance, transparent, flexible and conflict-free.

Because BestEx Research only services institutional customers, it is important to note at the outset that the proposed rule will not only benefit retail investors, but it will also help institutional investors reduce trading costs. We believe that institutional investors, via their brokers' algorithms and smart order routers, are likely to save even more than retail investors in reduced price impact and spread costs by interacting with retail order flow through the newly proposed auction mechanism.

We are strong proponents of the Commission's rule proposal and are pleased to share our thoughts regarding the proposal in this comment letter. Below, we detail our calculation of the

expected savings for retail investors (aligning heavily with the SEC’s analysis), and we add the savings expected for institutional investors. We believe the secondary outcome of improved execution for all market participants offers substantial support to the proposed rule. We also offer suggestions below that we expect will enhance the effectiveness of the rule’s implementation.

Savings for Retail Investors

The results of the SEC’s statistical analysis relating to adverse selection costs and spreads paid by retail customers were very similar to our own analysis, though there were differences in the methodologies, and we believe the similarities support the findings of both studies. The SEC’s economic analysis published in the Proposed Rule aligns with our 2021 paper [“Payment for Order Flow: The Good, The Bad, and The Ugly”](#) (the “BestEx Research Study”). Our most recent paper [“Is the Order Competition Rule a Windfall for Investors?”](#) compares the two studies.

A summary of the spread-to-adverse selection ratios resulting from both the SEC and BestEx Research studies are compared in Table 1 below.

	SEC CAT data All US equities	SEC 605 data All US equities	BestEx Research TAQ, 605 data Russell 3000 equities
Spread to Adverse Selection (Exchanges)	72.3%	82.3%	82.0%
Spread to Adverse Selection (Wholesalers)	167%	154.1%	213.0%

Table 1. Summary of key findings in the SEC economic analysis of current market conditions in its proposed Order Competition Rule and comparison to the BestEx Research Study.

The ratio of spread to adverse selection defines the level of competition in a given market structure.¹ Our first observation from this analysis is that wholesalers charge a higher spread per unit of adverse selection cost faced. While wholesalers do provide tighter spreads than the National Best Bid and Offer (NBBO) spreads to retail investors, when their spreads are normalized by the adverse selection cost they experience, wholesalers are not as competitive as liquidity providers on exchanges. Exchanges are, on average, at least 2.3 times more competitive than wholesalers.

the ratio of spread to adverse selection on exchanges is less than one, which means that realized spreads are negative. In a scenario of perfect competition, we expect the ratio to be zero (no loss or gain experienced for a single trade). So

¹ To compare the competitiveness of different market structures, we can calculate the ratio of spreads earned to the adverse selection costs incurred. If this ratio is greater than one, a trader is making money because they have earned more in spread than they paid in adverse selection. If the ratio is less than one, a trader is losing money, earning less in spread than they’re paying in adverse selection.

why would liquidity providers trade at a loss? Liquidity on exchanges is provided by both market makers and liquidity-seeking traders, including institutional investors. While market makers seek profit from providing liquidity, institutional investors use limit orders to reduce their costs in seeking liquidity. For institutional investors, as long as realized spreads are higher than negative 50% of quoted spread, it is more profitable to provide liquidity than to cross the spread.

In our BestEx Research Study linked above, we calculated the effect on NBBO spreads if retail flow moved to exchanges. We found that if retail flow moved to exchanges (without segmentation), the weighted average adverse selection on exchanges would decrease with the addition of this new, less toxic flow. From the ratio of spread to adverse selection, we estimated that bid-offer spreads would decline by approximately 25%. However, the SEC wants retail investors to be able to enjoy the benefits of segmentation while also exposing their flow to greater competition in an all-to-all market structure with this new rule.

Since retail flow will remain segmented, we can assume that their adverse selection costs will not increase. And since all investors and market makers will be able to compete for this flow, we can assume that the ratio of spread to adverse selection will remain the same as it is on current exchanges. Based on these assumptions, in Table 2 below we estimate the savings for retail investors based on the SEC's data and the BestEx Research Study.

	Using SEC data CAT data All US equities	Using BestEx Research data TAQ data, R3000 only
Current half spread paid by retail investors (bps)	2.11	2.11
Adverse selection costs created by retail investors (bps)	1.26	0.99
Projected half spread paid by retail investors if rule is implemented	0.91	0.81

Table 2. Summary of savings based on the SEC's economic analysis of the projected impact of the Order Competition Rule on retail investors' trading costs based on CAT data and the BestEx Research Study for comparison.

Our findings show that the SEC's economic analysis and the BestEx Research Study lead to remarkably similar spread cost projections for retail investors. These analyses were conducted independently using different data sources, methodologies, and different time periods. Using the SEC data, the total spread cost for retail investors is projected to decrease by 57% savings on their current trading costs, amounting to \$1.57 billion in savings annually. In our BestEx Research Study, the savings were measured to be 1.3 basis points, a 61% savings totaling \$1.70 billion annually.

Savings for Institutional Investors

The \$1.57 billion savings estimate from the SEC only applies to retail investors, but institutional investors are likely to save even more in reduced price impact and spread costs from interacting with retail order flow. Currently, only intermediaries (wholesalers) can interact with the retail order flow most of the time. With the newly proposed auction mechanism, institutional investors will be able to participate in these auctions and interact with retail liquidity through broker algorithms and smart orders routers. In fact, the rule prioritizes institutional investors' orders over other market makers' orders if they are at the same price.

Even if we assume no savings from reduced price impact, institutional investors' trading costs would decline substantially when interacting with retail order flow when compared to crossing the spread. Using the SEC's analysis, half of the spread on exchanges is currently 3.18 basis points. Rather than paying the half-spread of 3.18 basis points, institutional investors would earn some of the spread in retail auctions—albeit not as large—the 0.91 basis points the SEC projects retail investors would pay on average once the new rule is implemented. This would make institutional investors' total savings over paying the full spread 4.09 basis points. Of course, this must be adjusted for the adverse selection costs they would face in retail auctions, estimated by the SEC to be 1.26 basis points, yielding a total savings of 2.83 basis points on average.

We believe it is reasonable to assume that retail investors' orders will interact with institutional investors 50% of the time through the auction mechanism.² Then, based on the SEC's value of total retail volume at \$13.1 trillion annually, the total expected annual savings for institutional investors is \$1.86 billion through their interaction with retail orders in the auctions.

Adding our estimated total \$1.7 billion in savings for retail investors on an annual basis, resulting in total annual savings of about \$3.56 billion.

Suggestions for Implementation of the Proposed Rule

BestEx Research offers a number of constructive suggestions to enhance the impact of the proposed rule. First, the SEC included an exception that allows wholesalers to bypass the auction if they are willing to execute the order at the midpoint price, which gives them an advantage and leaves the remaining, more toxic flow for the auctions. This negates the assumption that the flow in auctions would be less toxic than what wholesalers experience today. It is also difficult to predict adverse selection because costs will vary based on how much flow wholesalers internalize.

Second, it is not clear whether it will be possible to submit resting orders against potential auction orders. Allowing investors to submit resting orders to exchanges with a "retail price improvement" option may increase the probability that retail investors find liquidity in auctions. For example, a liquidity provider may set a NBB at 10.20 with a retail price improvement of 50% of the spread. This means that they will not interact with traditional midpoint orders on that exchange. However, they may interact with retail order flow if that exchange receives it. Of course, they may also interact with retail order flow on a different exchange, in which case the liquidity provider may submit their order and submit to the other exchange's auction. Overall, providing price improvement orders may help ensure that the competitiveness of liquidity provisioning for auctions is at least as strong as it currently is on continuous limit order books.

² We note that the SEC proposed rule prioritizes institutional investors' orders over other market makers' orders if they are at the same price.

We further suggest that exchanges run continuous batch auctions rather than event-based auctions. For example, if Exchange A runs a batch auction every 50 milliseconds, all retail orders arriving at Exchange A within those 50 milliseconds would be grouped. At the end of 50 milliseconds, the exchange would publish the information about all retail orders waiting to be matched to the SIP feed. The exchange would then begin accumulating liquidity providers' orders for the upcoming auction and as well as eligible orders from its continuous limit order book. The auction would cross after an additional 50 milliseconds of order accumulation time. This kind of an auction mechanism, along with the retail price improvement orders from other market participants, would minimize the number of cancellations liquidity providers have to do (e.g., canceling an order posted on a different exchange that did not receive the retail order). Smaller auction sizes, longer duration and no guarantee of fill could drive a decision not to participate in retail auctions for some algorithm providers. Allowing resting orders to be integrated with auctions (which the SEC already has provided a provision for) but with an option to provide price improvement for interaction with retail flow (which the SEC has not provided a provision for) would encourage more participation from execution algorithms in these auctions.

Finally, 300 milliseconds is too long a duration for auctions. We believe that 100 milliseconds is sufficient for most algorithmic trading firms to respond. The longer the auction duration, the higher the likelihood that quotes on exchanges may fade, limiting the intended benefit of these auctions for all investors.

Conclusion

Overall, we support the Commission's proposal, as it increases competition and will reduce costs for both retail and institutional investors. It will minimize the forced intermediation in the marketplace, allow institutional investors to access non-toxic retail liquidity, and provide retail investors better prices than they experience today — reducing their costs by 57% on average.

We request that the Commission consider our implementation suggestions to ensure the proposed rule achieves its intended purposes—that retail investors benefit as much as possible from increased competition in the marketplace and that the costs of providing liquidity in the auctions by market makers and institutional investors are minimized.

We commend the Commission for proposing this rule, and we look forward to its enactment and the positive impact it will have on both retail and institutional investors and the marketplace as a whole.

Respectfully,

DocuSigned by:
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