



March 30, 2023

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Suite 220  
Chicago, IL 60607

**By Electronic Submission**

Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street, N.E.  
Washington, DC 20549

Re: **File No. S7-32-22; Release No. 34-96496; Regulation Best Execution**  
**File No. S7-31-22; Release No. 34-96495; Order Competition Rule**  
**File No. S7-29-22; Release No. 34-96493; Disclosure of Order Execution Information**  
**File No. S7-30-22; Release No. 34-96494; Regulation NMS: Minimum Pricing**  
**Increments, Access Fees, and Transparency of Better Priced Orders**

Dear Ms. Countryman:

**I. Introduction**

We appreciate the opportunity and respectfully submit our responses to the proposals listed above. These proposals represent a significant overhaul of existing market structure and therefore, we strongly urge caution in making changes unless and until the needs for those changes can be quantifiably articulated.

As a retail focused broker dealer, our goal is to provide the best customer experience possible. Through fast, reliable technology and outstanding support, we provide our retail customers with low cost, low barrier access to markets. Our customers are able to trade in stocks, options, futures, options on futures and crypto. Therefore, while we support any effort to improve that experience, we cannot support making large scale changes where there is no need to do so or to experiment with this acknowledged amazing experience.

Markets are fluid by nature. As seen recently, unforeseen developments potentially inject turbulence into the financial system. The reason U.S. markets are the “gold standard” of the world is because of our ability to withstand such turbulence. Our markets are resilient, much to the credit of the Commission, Congress and the industry itself. Therefore, we believe any significant changes to our market structure should be approached with extreme caution.

Although released as four proposals, it is impossible to separate these proposals due to their interconnected nature and potential overlap if implemented. Changes advocated in one proposal will undoubtedly affect other proposals. Because of that, understanding which <sup>ing</sup> what effect, will be nearly impossible. Commissioner Pierce recognizes this, “As will become

clear over the upcoming hours of discussion, the reforms embodied in these four proposals are complex and will likely have significant, overlapping, and unpredictable effects on the way our markets operate... An even more daunting task will be understanding and analyzing them as what they clearly are: a package of comprehensive reforms that will interact both with the existing ruleset and each other in complex and likely unpredictable ways. Moreover, the Market Data Infrastructure reforms we adopted two years ago have not taken effect, so uncertainties around how those changes will affect the market will be another wrinkle in the analysis.”<sup>1</sup>

Furthermore, by viewing these proposals as independent from one another instead of holistically, the Commission has failed to consider the exponential effects adoption of these proposals may create. There is no reasonable way we can expect to discern which proposal caused what outcome, good or bad, should all these be enacted simultaneously.

Therefore, we will be submitting one letter in response to all four proposals, just as we believe this is one proposal in four parts.

### *Economic Analysis Concern*

A recurrent disclaimer by the Commission is found in each proposal with respect to the economic analysis supplied. “However, as explained in more detail below, because the Commission does not have, and in certain cases does not believe it can reasonably obtain, data that may inform the Commission on certain economic effects, the Commission is unable to quantify certain economic effects. Further, even in cases where the Commission has limited data, quantification is not practicable due to the number and type of assumptions necessary to quantify certain economic effects, which render any such quantification unreliable. Our inability to quantify certain costs, benefits, and effects does not imply that the Commission believes such costs, benefits, or effects are less significant.”<sup>2</sup>

Given the lack of publicly available data, it is difficult to make an educated guess as to what effect the Commission’s proposals may have on market structure, liquidity and confidence in the markets. Without the ability to access the data used to arrive at the Commission’s conclusions, it is impossible to meaningfully comment on the analysis. While costs are cited in each proposal, benefits are less obvious and often, based on assumptions.

Our retail customer base can be segmented into broad categories of “active” and “passive”. Because of that, costs and benefits cannot be assumed to equally apply across all customers. Less active customers who often invest in less liquid stocks will be hurt by these proposals. Active traders, who rely on immediate execution, may see reduced fees in some instances; however, delays in fills or disruptions in liquidity may more than offset those reduced fees. There is also a possibility of increased transaction costs, commissions, fees or other costs added to cover compliance costs. Therefore, our inability to conduct our own robust analysis means we can neither confirm nor discredit conclusions provided and it would be irresponsible for us to move forward without that opportunity.

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<sup>1</sup> Pierce, Hester M. Statement on Disclosure of Order Information. December 12, 2022.

<sup>2</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 176.

### What Are We Solving?

In addition to the repetitive economic analysis disclaimers, we found ourselves repeatedly asking one question with respect to each proposal: What problems are we solving with these proposals?

Retail customer participation in markets and liquidity has never been higher. Execution speeds have never been faster. The entire market participation experience has never been better. Therefore, in the absence of an easily identifiable deficiency, we question these changes and how they improve an already great customer experience.

### Proposal Stances

In the following pages, we will provide our thoughts on each proposal, individually. Our stance on each proposal is as follows:

1. We support the proposal rule on Disclosure of Order Execution Information, with caveats.
2. We object to the proposed rule on Regulation Best Execution.
3. We object to the proposed rule on Order Competition.
4. We object to the proposed Regulation NMS rule, except for the modifications that apply to the limited set of "tick constrained" stocks.

Our specific concerns and reasoning behind our positions are expressed in the following pages. We appreciate the Commission taking the time to solicit our feedback and read through our conclusions. We look forward to meaningful engagement and discussion on these and other matters, as they should arise in the future.

## **II. Proposal on Disclosure of Order Execution Information**

Our position always starts with furthering transparency and improving customer experience. To that extent, we agree with the Commission that improvements in reporting requirements could be of benefit to customers and, with caveats, support this proposal. However, we would also be cautious that any changes made should assist in transparency without potentially causing confusion.

Currently, customers seeking information on execution quality can do so by viewing broker-dealers 606 reports. They can also access publicly available 605 data provided by market centers where orders are executed. We would point out that neither report is easily digestible nor often, if ever, used by retail customers. Before implementing changes to these reports, we would suggest the collection, dissemination and presentation of data be centrally controlled. FINRA has the data the Commission is seeking to publicly share and therefore, we feel for the sake of consistency and transparency, FINRA is best positioned to provide these reports. If FINRA provided all of the reports, a greater level of consistency would be achieved.

### *Risk of Customer Confusion Must be Mitigated*

Current regulations require market centers to offer 605 reports. Those reports are useful in identifying execution prices relative to the NBBO at the time an order arrived at the market. Today, each ticker in a 605 report is twenty columns wide by twenty rows deep, for a total of 400 data points per ticker. Under the new proposal by the Commission, 605 reports would expand to thirty-seven columns wide and forty-two rows deep. That will result in 1,554 data points per ticker on a universe of approximately 10,000 NMS traded products.<sup>3</sup>

The confusion this proposal risks creating seems disproportionate to the defined benefits it may provide. This brings us to our initial question regarding what problem we are attempting to solve. Our customers, at present, are not asking for, or seeking information at this level of granularity and few customers ever look at the existing 606 reports. While we agree in general that greater transparency results in a level playing field for retail customers, it seems counterproductive to do so in a manner that risks confusion.

Therefore, should the Commission move forward with this proposal, we suggest it be done in such a way that the data used is presented in a manner customers may find useful. We believe that can best be accomplished through FINRA acting as the primary agent, as that will not only provide for consistency, but alleviate any potential for firms to skew the way data is presented and potentially confuse customers.

### *Conflict Between Existing Proposals*

The Commission has not taken into consideration overlapping elements of this proposal and how it may impact others. Chairman Gensler has explicitly stated he sees each as a stand-alone

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<sup>3</sup> Mackintosh, Phil. A Data Driven Summary of the SEC's New Proposals. February 13, 2023.

proposal; however, we struggle to see how that can be accurate when each proposal will be subject to elements of others.

One immediate example of this arises between this proposal and proposed Rule NMS. In proposed Rule Disclosure of Order Execution Information, the Commission seeks 605 reports that contain order information segmented by order size.

“The Commission proposes to amend the definition of ‘categorized by order size’ to provide the following categories for order sizes: (i) less than 1 share; (ii) odd-lot; (iii) 1 round lot to less than 5 round lots; (iv) 5 round lots to less than 20 round lots; (v) 20 round lots to less than 50 round lots; (vi) 50 round lots to less than 100 round lots; and (vii) 100 round lots or greater.”<sup>4</sup>

The reporting segmentations proposed in this proposal are based on current round lot definitions. However, because the Commission has simultaneously submitted for proposal a new rule that would change tick sizes and round lot definitions (Proposed Rule NMS), the reporting requirements here are subject to change which could in turn create customer confusion.

#### Overly Burdensome Costs With Unknown Benefit

On page 340, the Commission provides their cost estimate of adopting these rules. In their analysis, the Commission estimates broker-dealers will incur an initial cost of \$8.9M and ongoing compliance costs of \$6.8M.<sup>5</sup> As stated, we are unable to verify the cost burden because no source data was provided.

Many broker-dealers outsource reporting because they lack the infrastructure to do so themselves. Bringing that reporting in-house would be a substantial cost that would likely find its way to customers through either commission charges or other fees. However, both FINRA and market centers retain this information in aggregate, which is why we believe they can not only provide views of the data being requested by the Commission, but can do so in a more consistent and cost-efficient manner.

Additionally, although we understand and support the Commission’s efforts at providing customers with greater transparency, we are unclear as to the benefit it will provide customers. Further transparency that generates costs, but if not used by customers, is a waste of resources and ultimately would create costs without any real benefits.

#### Conclusion

We believe in providing retail clients with the best possible client experience, which involves the highest level of transparency. In an industry that is under both regulatory and public scrutiny, we are hesitant to add confusing and complicated data points customers can access, but not digest.

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<sup>4</sup> 17 CFR Part 242. RIN 3235-AN22. Securities and Exchange Commission. Disclosure of Order Execution Information. Page 87.

<sup>5</sup> 17 CFR Part 242. RIN 3235-AN22. Securities and Exchange Commission. Disclosure of Order Execution Information. Page 340.

Therefore, while we support this proposal conceptually, we suggest formatting it through existing reports and current data aggregators. Information contained within the 605 and 606 reports can be of value to customers and we want to make sure they continue finding value within those reports. Reporting metrics the Commission seeks are currently accessible to FINRA. Allowing FINRA central control over 605 reporting would be more streamlined, consistent and provide better clarity to the end user.

### **III. Regulation Best Execution and Order Competition Rule**

We are combining our response to both of these proposed rules because we feel the overlap is substantial and therefore, difficult to comment on one with commenting on the other.

We support an infrastructure that provides our customers with best execution. However, we believe that infrastructure in its current format accomplishes that, and we oppose proposed rule Regulation Best Execution as well as proposed Order Competition Rule for the reasons stated below.

The Commission has not made clear why the existing best execution system, regulated by FINRA, needs change. Nor have the Commission addressed why the manner in which orders are currently competed for is ineffective. In its economic analysis, the Commission has not clarified what the financial benefit to customers will be under Regulation Best Execution. Further the alleged benefits under Order Competition Rule cannot be independently verified. Finally, the criteria and manner with which broker dealers will be required to seek and execute orders strikes us as unnecessarily complex and overly burdensome.

If the retail customer experience is subpar, changes would be warranted. However, there is limited rationale and no quantitative evidence that the status quo is substandard. Therefore, the Commission's proposed mandates risk becoming an expensive and unnecessary experiment in "box checking" at the expense of the investing public, rather than a continued focus on improvement and innovation. What the Commission is proposing is an ambiguously defined outcome-based solution reliant upon an unclear process that purports to solve a problem that has yet to be identified or articulated.

In Regulation Best Execution, the Commission lays out a series of rules by which broker dealers should execute orders. Included in these rules, broker dealers would be required to obtain and assess reasonably accessible information on markets trading relevant securities; identify markets offering most favorable pricing or material potential liquidity sources; and incorporate material potential liquidity sources in order routing considerations.<sup>6</sup> Additional requirements are included for so-called "conflicted orders" or what is more commonly known as Payment for Order Flow.

In proposal Order Competition Rule, a similar set of prescriptive rules governs the manner for which there should be competition for orders. This proposal states, "a restricted competitive trading center shall not execute a segmented order internally until after a broker-dealer has exposed such order to competition at a specified limit price in a qualified auction operated by an open competition trading center."<sup>7</sup> The Commission's proposal acknowledges new terms being introduced such as: segmented orders, open competition trading centers, restricted competition trading centers and qualified auctions. This wording suggests broker dealers will be tasked with essentially tagging each order received so that, in the event of an audit, firms can demonstrate a list of checkmarks that were followed in conjunction with the new terminology being introduced.

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<sup>6</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 41.

<sup>7</sup> 17 CFR Parts 240 and 242. RIN 3235-AM57. Securities and Exchange Commission. Order Competition Rule. Page 69.

Those checkmarks threaten to take precedence over order execution quality in order for broker dealers to avoid falling out of compliance with this mandate. We would also ask consideration be given to how this will work when combined with the proposal on Disclosure of Order Execution Information.

### Infrastructure and Costs

The success of the current market structure is a direct result of the industry creating a business model that benefited all participants and a regulatory framework that ensured adherence to that framework. From the inception of the Securities and Exchange Act until approximately thirty years ago, market access was limited with costs being the greatest obstacle. It was commonplace for a broker to charge a percentage of notional value traded in the form of commissions. Online trading created the first significant change in this space. The largest salvo for retail customers; however, came when today's retail brokerage business model, which relies on Payment for Order Flow (PFOF), materialized.

This model allowed retail brokers to receive payments from market makers and exchanges, and as a result eliminate or massively reduce commissions charged to customers. As importantly, these retail brokers were able to develop sophisticated yet customer friendly trading platforms and invest in customer education all while providing best execution in accordance with FINRA regulations. The aggregate impacts resulted in lower barriers of entry to a wider range of retail customers and a better customer experience, while providing highly competitive pricing. At the same time, order execution quality has improved, something broker-dealers are regularly required to monitor.

The success of the business model did not materialize on its own. Significant investment was made by broker-dealers in infrastructure costs to make sure retail orders are executed at lightning speed, while achieving best execution. Those infrastructure investments could be jeopardized if this proposal is enacted. Systems and procedures already in place that facilitate routing of orders may potentially need a total overhaul at substantial expense. This will be compounded by the additional data and connectivity costs such drastic changes will require.

In its Regulation Best Execution, the Commission addresses additional cost burdens they anticipate broker dealers will incur. By its own calculations, in order to comply with Regulation Best Execution, the Commission, “estimates aggregate compliance costs of \$165.4 million in one-time costs and \$128.9 million in annual costs on broker-dealers as they update, or establish, their policies and procedures for the handling, execution and review of customer orders.”<sup>8</sup> A further reading of these estimates, as provided in the appendix, shows these hypothesized values are based on assumptions we cannot verify due to data sources not being made available. Therefore, the actual costs could be much higher.

The costs of order execution are of paramount concern. The Commission, as we stated earlier, with limited input from industry experts and in stark contrast to multiple academic and industry analysis, asserts, “that qualified auctions as designed by the Proposal would result in additional

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<sup>8</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 175.



price improvement for the marketable orders of individual investors that could reduce the average transaction costs of these orders by 0.86 basis points ('bps') to 1.31 bps. The Commission estimates that segmented orders that would be eligible to be included in qualified auctions could account for 7.3% to 10.1% of total executed dollar volume. Given this estimate, the Commission preliminarily estimates that the Proposal could potentially result in a total average annual savings in individual investor transactions costs ranging from \$1.2 billion to \$2.35 billion."<sup>9</sup>

However, the Commission essentially contradicts itself, or at a minimum, hedges itself shortly thereafter. "The Commission acknowledges considerable uncertainty in the costs that would arise from Proposed Rule 615, due to whether the current market practice of routing through wholesalers would persist. First, the Proposal would likely cause wholesalers and some retail brokers to incur significant adjustment costs to their operations, as well as possible decline in profitability. The Proposal could also result in costs to individual investors, such as some retail brokers potentially resuming charging commissions for NMS stock trades, although the likelihood of this may be low."<sup>10</sup>

Because the data set from the Commission's analysis was not fully disclosed and according to the Commission, not fully developed, we cannot speak to the veracity of any findings. However, it is worth noting that academic studies, with publicly available data, have come to significantly different conclusions.

Dyhrberg, Shkilko and Werner find in their paper, "In a comprehensive sample of all U.S. equities traded from January 2019 through May 2022, we carefully compare the benefits of wholesaler and exchange executions and find that the majority of retail orders are better off being routed to wholesalers. We also show that abolishing the wholesaler system would cost retail investors close to a billion dollars per month in additional trading costs."<sup>11</sup> This study was done with publicly available data contained within SEC Rule 605 reports, contrary to Commission findings.

The discrepancy in cost outcomes between the Commission findings and this study are substantial. Whereas the Commission is asserting cost savings for retail customers of \$1.2 - \$2.35B annually, this study demonstrably shows increased costs for customers.

Battalio and Jennings find similar results to Dyhrberg et.al in a recent study considering data in the month of May 2022. "As measured by reporting rules established by the Securities and Exchange Commission, we find that the wholesaler(s) provided about \$78 million in savings to investors for the month. This swells to over \$388 million including odd lot and short sell orders and the execution of large orders at better prices than an investor would have received if the

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<sup>9</sup> 17 CFR Parts 240 and 242. RIN 3235-AM57. Securities and Exchange Commission. Order Competition Rule. Pages 181-182.

<sup>10</sup> 17 CFR Parts 240 and 242. RIN 3235-AM57. Securities and Exchange Commission. Order Competition Rule. Page 183.

<sup>11</sup> Dyhrberg, Anne; Shkilko, Andriy; Werner, Ingrid. The Retail Execution Quality Landscape. Charles A. Dice Center for Research in Financial Economics. December 12, 2022. Pg. 2.

wholesaler(s) simply executed these orders at order-receipt-time depth-of-book displayed prices aggregated across all exchanges.”<sup>12</sup>

Taken together, these two proposals essentially guarantee additional costs that do not exist today. However, the benefits are ambiguous at best. It appears the Commission is acting more on intuition or bias than actual facts and hard numbers. This leads us to believe that this proposal is much more of an experiment to see what could work, with a high probability of unwinding a system that we know works well. We are fearful of any proposal that would experiment with our client orders on an “unsubstantiated hunch” that there may be slight improvement in market operation, but at the risk of destroying the customer experience.

Ultimately, the burden of these costs, when taken in conjunction with the Commission’s other related proposals, risks falling on the shoulders of retail customers in the form of, but not limited to, reinstating commissions costs and introducing additional fees (i.e., platform fees), higher margin rates, or penalties for failing to maintain an account minimum. What the Commission seems to suggest is that the industry find ways to subsidize additional operational and compliance costs mandated by these proposals at the expense of the customer in order to meet an unnecessary set of requirements that result from choosing one business model over another for the entire industry.

While the industry should be lauded for the progress made in order execution, transaction costs and customer experience, the Commission is instead penalizing industry participants, both firms and customers, in this proposal with an overly prescriptive set of rules and regulations that will force firms to make significant investments simply to remain compliant with regulations that do not improve either transparency or the experience of retail customers, but will increase customer costs.

#### *Lack of Clarity in Regulation Best Execution*

As written, these proposed rules are ambiguous. With respect to Regulation Best Execution, “Proposed Rule 1101 does not include specific requirements regarding the manner in which broker-dealers would comply with the best execution standard. Rather, proposed Rule 1100 would require a broker-dealer to use reasonable diligence to ascertain the best market for a security, and buy or sell in such market so that the resultant price to the customer is as favorable as possible under prevailing market conditions, and proposed Rule 1101 would additionally require a broker-dealer to establish and maintain written policies and procedures reasonably designed to comply with the proposed standard.”<sup>13</sup> This seems duplicative given FINRA’s Best Execution (i.e., 5310) already covers this requirement.

If the Commission seeks greater transparency for retail customers, an objective we strongly support, then promulgating unclear regulations will not accomplish that goal. The Commission cannot reasonably expect to achieve the underlying goal(s) this proposal serves to accomplish if

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<sup>12</sup> Battalio, Robert; Jennings, Robert. Why do Brokers who do not Charge Payment for Order Flow Route Marketable Orders to Wholesalers? December 14, 2022. Pg. 1.

<sup>13</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 63.

the proposal does not set forth clear expectations and well-defined protocols for achieving compliance. As written the proposal creates a likely possibility of inconsistent interpretations among regulated entities, resulting in discrepancies or even unintentional non-compliance, rather than more transparency.

This proposal attempts to separate itself from existing regulations, at least to some degree, with examples of additional data points which broker-dealers would be required to document for reporting purposes. However, the lack of clarity that makes compliance a near impossibility.

The Commission lays out reporting criteria which broker dealers would need to include in their procedures under Regulation Best Execution. Under Proposed Rule 1101(a)(1)(i) the Commission states, “obtaining and assessing reasonably accessible information, including information about price, volume, and execution quality, concerning the markets trading the relevant securities.” The proposal then continues under 1101(a)(1)(ii), “identifying markets that may be reasonably likely to provide material potential liquidity sources.” Finally, Proposed Rule 1101(a)(1)(iii) states, “incorporating material potential liquidity sources into its order handling practice and ensuring it can efficiently access each such material potential liquidity source.”<sup>14</sup>

We have multiple concerns and objections to the above rules within the proposal. To begin, the Commission fails to make clear what it believes to be a “material potential liquidity source.” Defining what we will call a “qualified market” and what constitutes “liquidity” could take a number of forms. The potential criteria for a qualified market includes, but is not limited to: total share volume of all NMS traded securities; total dollar volume of NMS traded securities; execution quality (both with respect to speed and price); exchanges that maintain high share and/or dollar volume within specific securities; or any other number of potential criteria the net result of which leads to a potentially inexhaustible list of possible “material liquidity sources.”

The vast universe of liquidity sources results in placing an unfair burden on broker-dealers to connect to and pay for, data from all potential sources. That cost will not be immaterial and likely will result in a misallocation of resources at the expense of retail customers. Commissioner Pierce stated a similar concern. “The winners of course will be the tiny trading venues that play on this earnest compliance officer’s anxieties and convince her to connect to their data feed just in case her firm might find a great price there one day.”<sup>15</sup>

The net result of many aspects to this proposal and additive costs could be the elimination of competition amongst broker-dealers for retail customers, along with a loss of specialized services. The Commission acknowledges as much: “The Commission further believes that the costs of the rule could advantage larger broker-dealers and may increase barriers to entry and disadvantage smaller broker-dealers, potentially resulting in some of them exiting the market. To the extent that smaller broker-dealers are more likely to provide specialized services and provide innovation, there may be less competition to provide specialized services and less innovation if the proposal is adopted. Investors whose broker-dealers exit the market would incur search costs

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<sup>14</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Pages 65-66.

<sup>15</sup> Pierce, Hester M. Is This The Best Execution We Can Get? December 14, 2022.

to find alternative broker-dealer that offer the same services; those services may be offered at inferior prices by remaining competitors.”<sup>16</sup>

These potential outcomes, acknowledged by the Commission, are antithetical to a free market economy. Regulatory burdens that lack a quantifiable necessity and reduce competition and by extension, efficiency, contradicts the very concept of a market driven economy. Rather than creating transparency, this proposal risks obscuring it. Where the industry has made massive strides in reducing barriers to entry for customers, primarily through cost reduction and direct investment by brokerage firms in providing a better customer experience, this proposal risks undoing all the progress by conducting an experiment on the retail customer.

### *Conflicted Orders Under Regulation Best Execution*

As the Commission lays out, additional policies and procedures would be placed on broker-dealers currently engaged in what the Commission labeled, “conflicted orders.” However, the proposal is ambiguous as to what exactly constitutes “conflicted.” Clearly, as mentioned multiple times, the Commission is considering orders for which broker-dealers receive payment as being conflicted. But there are other ways orders could become conflicted and the Commission fails to take these into account or how these orders would be treated vis-à-vis additional reporting requirements. For example, if one exchange offers lower costs than another, it is unclear if this is considered conflicted. If volume discounts on exchange fees are offered, advertising arrangements or reduced data fees, we are unclear if those orders are conflicted. If fees vary depending on order type, those could potentially be considered conflicted. Therefore, while the Commission makes clear their business model preference, they fail to address and clearly define what constitutes a conflicted order or quantify the negative results they presume flow from conflicted orders, which makes application of any such rule arbitrary at worst and ambiguous at best.

The Commission also falls short in explaining how retail brokers will comply with additional burdens where a conflict is perceived to exist. “It is not clear how a retail broker-dealer would go about complying with the heightened policies and procedures requirements that apply when there is a conflict. These requirements as interpreted in the release are so detailed and complex that the Commission’s discussion of its expectations for how retail brokers will comply with them spans over thirty pages and seems to have a one size fits all for firms handling customer orders in NMS stocks, options, and fixed income securities.”<sup>17</sup>

### *Lack of Clarity in Order Competition Rule*

Like the Best Execution ambiguity, the Order Competition Rule lacks any clearly defined plans for several potential scenarios. To begin, we are unclear as to how orders not filled at auction will be addressed and what that may mean with respect to the best execution obligation. In the event an order is placed in auction but fails to be executed in the 100 – 300 milliseconds timeframe, there is no guidance provided. It is possible the market will change and the order not

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<sup>16</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 344.

<sup>17</sup> Pierce, Hester M. Is This The Best Execution We Can Get? December 14, 2022.

be executed. The Commission offers no guidance for how these orders are to be handled or explained to customers left confused.

We are also unclear as to the effect this rule will have on thinly traded stocks, which may include small cap stocks and initial public offerings (IPOs). Under the current model, wholesalers that receive order flow from broker-dealers are obligated to provide best execution in all underlyings. This includes thinly traded assets. Broker-dealers continually evaluate order execution by wholesalers to ensure customers are receiving best execution. As Ernst, Spatt and Sun explain, “Under broker’s routing, a broker can evaluate a wholesaler on the performance across all orders, including different sizes, or stocks of different liquidity. This enables a cross-subsidization, where wholesalers may make losses trading small stocks, compensated by profits trading larger stocks. Switching to order-by-order auctions can substantially decrease market maker incentives to trade small stocks. As a result, the drop in small stock liquidity, as the wholesaler incentive is gone, as well as retail investor welfare, can be particularly precipitous in smaller, less liquid stocks.”<sup>18</sup>

An order-by-order auction removes incentives on market makers to execute trades in less liquid underlyings. They will be able to feed orders to an auction they are currently obligated to fill at competitive prices. The assumed negligible gains in more liquid names will be more than offset by what we see as losses in less liquid names as well as those that are currently less liquid, suffering an even bigger loss of potential liquidity. The effect of this change is disconcerting, and we find it hard to see how it adds to a better retail client environment.

Retail investors have an appetite for all listings, including less liquid underlyings, this includes IPOs upon which companies rely in order to grow and create jobs. Order-by-order auctions have the potential to destabilize this part of the market if investors receive poor quality executions.

We are also confused as to what happens when market makers opt to not participate in an auction. Auction participation by market makers is not mandated in the proposal. Therefore, it is possible that a non-participant could be offering a price better than what is available at auction. However, the obligation by broker dealers to place orders in auction, combined with the lack of obligation to participate in auctions by market makers will likely result in violations of the best execution mandate.

Finally, we lack answers to the unintended consequences this unprecedented change in market structure may have with respect to tangentially related markets. Option markets are priced efficiently with a core component being the price of the stock to which the option is tied. If we begin changing the manner in which equity trades are executed, a butterfly effect on related markets is likely to ensue.

Covered calls, currently executed by wholesalers, would now be split up with the equity portion of the order being sent to auction. The decoupling of the order (the stock and option) could lead to less efficient pricing for the order in total. It could lead to less efficiency in hedging opportunities. This is part of our concern described above with respect to better pricing available away from an auction. The price of an option may reflect equity pricing by market makers that

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<sup>18</sup> Ernst, Thomas; Spatt, Chester; Sun, Jian. Would Order-By-Order Auctions Be Competitive? December 13, 2022.

do not participate in auctions. This disconnect would lead to incongruent pricing and potential arbitrage opportunities unrecognizable by retail customers but seen as opportunistic by institutional investors. The exploitation of that arbitrage opportunity not only fails the Commission's goal of greater transparency, but it would actually lead to greater ambiguity, confusion and undermine confidence in markets.

#### Concentration Risk from Order Competition Rule

As recently as January, we saw the consequences of an unreliable system when a "system glitch" prevented opening auctions in a number of securities on the New York Stock Exchange. That failure led to mass confusion in multiple highly liquid stocks such as ExxonMobil, 3M, Verizon and McDonalds. Trades were executed at erroneous prices and had to subsequently be busted. A lack of reliability at this particular point in history is too often associated with nefarious motivations and distrust. Therefore, our concerns are not just with respect to anything trade execution-related, but also with how changes to order execution affects the trust necessary to maintain liquid markets.

If order execution is confined strictly to auctions and one auction execution venue fails, the consequences could be potentially massive. It is reasonable to assume certain auction venues will attract more liquidity than others. Should one of those more liquid venues experience an outage, the fallout risks could be catastrophic.

#### Order Execution Quality and Order Competition Rule

For purposes here, execution quality is not limited to price improvement. We also take into consideration size improvement, responsiveness to customers' needs and requests, fill rates and other customer service-related metrics.

As the Commission itself points out, "In particular, marketable orders routed to wholesalers appear to have higher fill rates, lower effective spreads, and lower E/Q ratios. These orders are also more likely to receive price improvement and, conditional on receiving price improvement, receive greater price improvement when routed to wholesalers as compared to exchanges.

"In addition, wholesalers may provide additional valuable services to retail brokers that route order flow to them. Based on staff experience, the Commission understands that wholesalers are more responsive to retail brokers that provide them with order flow, including, for example, following customer instructions not to internalize particular orders. More broadly, wholesalers appear to provide retail brokers with a high degree of consistency with regard to execution quality."<sup>19</sup>

The Commission's acknowledgement of current execution quality brings into question why they would propose to make such drastic changes to the way in which orders are executed. Furthermore, there is no data to show that the changes being proposed will result in retail customers receiving consistent, or improved, order execution quality. In fact, the auction model proposed within the proposal may very well prove to be detrimental to retail investors.

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<sup>19</sup> 17 CFR Parts 240 and 242. RIN 3235-AM57. Securities and Exchange Commission. Order Competition Rule. Page 204.

The Commission provides an example of a customer placing an order that is then routed to a wholesaler under the new auction mandate. “The wholesaler that received the segmented order could select a price at which it was willing to execute a segmented order internally. Before executing internally, however, the wholesaler would be required to submit the segmented order to a qualified auction with a specified limit price. As discussed further below, the specified limit price is not a price at which the wholesaler is guaranteeing to execute (i.e., it is not a ‘reserve’ price or a ‘backstop’ of the segmented order). Rather, the specified limit price would inform auction responders on how to price their orders and also, if the segmented order did not receive an execution in the qualified auction, would be the price (or better) at which the wholesaler or other restricted competition trading center subsequently could execute the segmented order as soon as reasonably possible.”<sup>20</sup>

In this example, the wholesaler receiving the order is mandated to place the order into auction prior to being able to execute. At this point, trading continues, and the order placed in auction risks being traded through or having the market move. If it is not filled at auction, the wholesaler is not obligated to execute the order. The failure to obtain a fill at auction may cause the wholesaler to not execute an order at a limit price because the wholesaler may conclude a lack of liquidity for the underlying and not want to be forced to inventory the position. This could become especially pronounced in less liquid stocks, which retail customers frequently trade.

#### Unresolved Questions/Concerns

- On page 71 of the Order Competition Rule, the Commission provides a hypothetical of a wholesaler receiving an order and prior to executing, would first send the order to a qualified auction.<sup>21</sup> This would place a burden on broker dealers, working with wholesalers, to make sure orders were indeed sent to auction. However, the Commission does not offer guidance for how a broker dealer would audit such a process. We are also unsure how this proposal will operate with existing rule 5130 for best execution.
- Exchanges are not under a best execution obligation. Nowhere in the proposal does the Commission explain whether or not qualified auctions would be subject to best execution. We contrast that with existing market structure where broker dealers and wholesalers are obligated to provide best execution and therefore question if this new process offers customers similar protection.
- The process of exposing orders to qualified auctions may delay execution. This proposal mandates firms to seek additional material sources of liquidity (and in the case of conflicted orders find even more sources of liquidity). However, the proposal does not provide guidance as to what constitutes a “material source,” how many sources should be located or a time limit for finding those sources. Because of that, broker dealers may be

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<sup>20</sup> 17 CFR Parts 240 and 242. RIN 3235-AM57. Securities and Exchange Commission. Order Competition Rule. Page 71.

<sup>21</sup> 17 CFR Parts 240 and 242. RIN 3235-AN24. Securities and Exchange Commission. Regulation Best Execution. Page 71.

forced to compromise between searching for enough sources of liquidity to satisfy the proposed rule and providing timely execution of customer orders.

- The search for liquidity may also cause information leakage. Order sources will be exposed in the auction process. We have concerns that potential counterparties may pick and choose which orders they choose to interact with based on the order's origin. From where an order originates could also affect liquidity available and/or pricing. This could ultimately result in certain firms receiving better or worse execution quality.

Also, we point out the additional steps both these proposals seek to place on wholesalers. The order competition and execution process under these proposals essentially sets out a list to follow. The list of boxes is longer and more complex if broker dealers want to work with wholesalers. We struggle as to why the Commission would want to make this process overly burdensome given the model's level of success with respect to execution speed, quality and cost.

### Conclusion

The interconnected nature of all these proposals makes commenting on one without acknowledging others, difficult. Speaking to how this challenge is evident in the Order Competition Rule and estimates provided, Commissioner Uyeda made the following statement, "But this estimate does not factor in the potential benefits associated with the proposed changes to Rule 605 and the tick size, which are intended to further facilitate competition and reduce realized spreads of wholesalers. Thus, retail investors may not even see a full penny of improvement."<sup>22</sup> Proposals put forth elsewhere will directly impact this proposal, just as this proposal will affect others. Therefore, it is not possible to view any one proposal in isolation. The collective impact must be acknowledged and analyzed thoroughly.

Under the Order Competition Rule, the Commission is proposing an entire new means of conducting order execution which has neither been piloted nor investigated robustly enough to justify adoption. We have just recently experienced an auction issue on the New York Stock Exchange that led to mass confusion.<sup>23</sup> If this new auction system suddenly experienced an outage, investors may lose faith and confidence in markets, undoing the decades of progress we have made in eliminating barriers to entry and making markets accessible to more retail customers.

In total, the substantial additional costs the Commission has acknowledged will result from just these two proposals, combined with a lack of clearly defined or quantified benefits, creates a potentially unmitigated risk for retail customers, the industry, and the financial markets. Yet we have an obligation to protect the integrity of the markets. These proposals would undo decades of market innovation and improved retail customer opportunity and experience resulting in a degradation of the retail client experience.

These proposals, not having been fully vetted, risk taking multiple steps backwards that will decrease retail customer participation because of increased costs and poor customer experience.

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<sup>22</sup> Uyeda, Mark. Statement on Proposed Rule Regarding Order Competition. December 14, 2022.

<sup>23</sup> NYSE Glitch Leads to Busted Trades, Prompts Investigation. Reuters. January 24, 2023.



For the foregoing reasons, we oppose this section of the proposal.

**IV. Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders**

A primary responsibility of the Commission and all market participants must be to do no harm to the investing public. Any proposed changes must be targeted at identified inefficiencies addressed with quantifiable solutions. Additionally, proposed solutions to these inefficiencies must be transparent to the retail investor to maintain faith and confidence in the market. Further, the Commission should not create solutions in search of problems. Any changes which may dramatically impact market structure should only be enacted following a vigorous analysis that concludes that the changes are necessary and can be agreed upon by industry regulators and all market participants. In this section, we seek to address the above stated proposal with respect to minimum pricing increments, access fees and order pricing.

One of the strengths of our current system is the ability to have all quoting increments (ticks) easily understood. It enables customers to interact with the market in a way that is relatable to all other financial aspects of life and is the very basis of our financial system. A penny is a penny. That system serves to create trust in the marketplace. Under the guise of transparency, the end result of changes to tick size may produce unintended consequences by taking away easily understandable quote and trade increments and replacing them with frequently changing tick sizes. The Commission is proposing moving from a single definition of ticks and round lots to sixteen different combinations of round lots and minimum pricing increments. How can the Commission ask retail customers to understand those adjustments? In so doing, there is a substantial risk of creating confusion. This is essentially an experiment on retail customers that will erect a barrier to entry where none currently exists.

Stock Price	If the time-weighted quote spread, averaged			
	Less than <= \$0.008	Between \$0.008 <= \$0.016	Between \$0.016 <= \$0.04	\$0.04 +
Less than \$250	100 round lot with 0.001 ticks	100 round lot with 0.002 ticks	100 round lot with 0.005	100 round lot with 0.01 ticks
\$250.01 to \$1,000	40 round lot with 0.001 ticks	40 round lot with 0.002 ticks	40 round lot with 0.005 ticks	40 round lot with 0.01 ticks
\$1,000.01 to \$10,000	10 round lot with 0.001 ticks	10 round lot with 0.002 ticks	10 round lot with 0.005 ticks	10 round lot with 0.01 ticks
\$10,000.01+	1 round lot with 0.001 ticks	1 round lot with 0.002 ticks	1 round lot with 0.005 ticks	1 round lot with 0.01 ticks

We understand that there may be, for some small amount of “tick constrained” stocks, the need to trade in sub-penny increments. However, we take note with the number of stocks that are actually tick constrained. “In addition, some NMS stocks are considered to be tick-constrained, meaning that they regularly experience a time-weighted average quoted spread of 1.1 cents or less, which indicates that these stocks are frequently quoted in the smallest increment permitted under the rule. The Commission identified 1,337 NMS stocks that would be considered tick-

constrained under this metric. These tick-constrained NMS stocks account for 56.1% of estimated share volume and 23.2% of estimated dollar volume.”<sup>24</sup>

A more thorough analysis conducted by the Chicago Board Options Exchange (CBOE)<sup>25</sup> came to a demonstrably different conclusion with respect to the number of actual tick-constrained stocks. In its analysis, the CBOE found that of the universe of 10,125 NMS securities, just 4% or 67 securities are truly tick-constrained. The New York Stock Exchange identified 528 tick-constrained stocks while Nasdaq identified approximately 600. Therefore, not only is the pool of tick-constrained stocks potentially considerably smaller, but these studies suggest the Commission’s estimates with respect to share volume as well as dollar volume attributable to tick-constrained stocks is greatly exaggerated. In order to improve trading in these 67 securities, we would advocate that this small group be allowed to operate in a half-tick environment.

One of the greatest challenges in other markets is a lack of consistent tick size. Different products trade in different increments and the value of those increments is non-standardized. It creates a barrier to entry for retail investors. What the proposal before us today effectively does is move the pricing system more toward that of these other markets, such as the futures market, by obfuscating the nomenclature of quotations. We will take something easily understandable by retail investors and change it to something only professionals will likely understand.

The proposal would create a moving target system of quotations, with the potential to change quarterly. As stated, we feel asking retail customers to understand the system being proposed is unfair and has potential to create a new barrier to entry. Confused customers will then be pushed toward contacting customer support for explanations as to how the new quoting system operates. As demand increases for efficient and educated support staff, firms will be required to increase their investments in customer support representatives so they can adequately educate customers. An unintended consequence of this may be seen in two ways, the first and most concerning for the entire Industry is confusion leading to retail clients disengaging from the market due to confusion or lack of trust. A secondary consequence could be that customers, confused by pricing increments, will want trade desk representatives to place orders on their behalf. Already, we see many firms across the industry up charging for phone-based orders, as well as phone-based support at a time when we believe the focus should remain on reducing costs for customers where possible.

While this proposal seeks to save customers fractions of a penny on order execution, we are not sure that will actually happen and may instead degrade their experience. The reality is it will likely increase demand for more customer support specialists. Firms will need to find qualified industry professionals, then allocate resources to those individuals (costs incurred for study materials, license exams, ongoing registration fees). The costs associated with this then risks falling on customers, more than offsetting the fractions of a penny saved on order execution.

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<sup>24</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 34.

<sup>25</sup> <https://www.cboe.com/insights/posts/cboe-proposes-tick-reduction-framework-to-ensure-market-structure-benefits-all-investors/>

The Commission’s proposal also risks the elimination of price improvement for retail investors. As stipulated in this proposal, both quotations and order execution would be constrained such that they are harmonized. In other words, if the minimum pricing increment on XYZ stock is \$0.01, customers will be filled in increments of \$0.01 and unable to receive fractional penny price improvements. “The proposed amendments to rule 612 would level the competitive playing field in this regard by requiring market participants, regardless of trading venue, to offer price improvement to investor orders in the same minimum pricing increments, unlike today where OTC market makers are able to offer investor orders price improvement in smaller pricing increments compared to their exchange and ATS counterparts.”<sup>26</sup>

We question the purpose of this, especially when the ultimate goal of these proposed rules is to benefit retail customers by providing transparency and a better experience. Eliminating the ability to price improve seems counterproductive to the intents of the Commission’s goals.

An additional concern with this proposal is the potential for stepping ahead. “In 2004, as part of Regulation NMS, the Commission proposed rule 612 to implement minimum pricing increments for quoting NMS stocks... Rule 612 was designed to ‘deter the practice of stepping ahead of exposed trading interest by an economically insignificant amount,’ which could discourage investors from submitting limit orders.”<sup>27</sup> Creating a moving target of tick sizes in sub-penny increments will, in our opinion, increase the risk of step ahead orders at the expense of retail customers. Nowhere does the Commission address why this concern, originally cited for penny price increments, is not a concern when the economic impact of stepping ahead would be lessened. Further, the dynamic tick structures being proposed almost certainly guarantee the average retail investing customer would be unaware of such a practice until it becomes exposed, potentially leading to deepening distrust in markets.

Also concerning is the deference given to one business model. Multiple exchange funded studies are mentioned in this proposal; however, no other industry feedback is cited. At the same time, the Commission repeatedly makes mention of order flow to off-exchange market makers, yet contradicts itself in so doing. “Today, most marketable retail order flow is executed off-exchange by OTC market makers who, in addition to not being limited by exchange rules, offer, in many cases, payment for order flow (‘PFOF’) for retail orders.”<sup>28</sup>

Yet earlier in the same proposal, the Commission notes, “As of September 2022, on-exchange volume is approximately 58% while off-exchange/OTC volume is approximately 42%, while in 2007, on-exchange share volume was 71% and off-exchange/OTC volume was approximately 29%. The market structure of the OTC market that permits the execution of orders more readily

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<sup>26</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 34.

<sup>27</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 22.

<sup>28</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 32.

in sub-penny amounts has been a factor that contributes to this result.”<sup>29</sup> Continuing on, the Commission, “is seeking to address concerns about the competitive dynamic between exchanges/ATSs and OTC market makers because the ability of OTC market makers to more readily trade in sub-penny increments than exchanges and ATSs factors in the increasing percentage of equity volume that is executed off-exchange.”<sup>30</sup>

The Commission identifies multiple reasons for why order flow has moved off exchange. Payment for order flow and sub-penny executions are both cited. However, the Commission fails to take into account other potential explanations. No mention is made to fees charged or execution times and why retail investor orders are often better served off exchange. Again, it appears the Commission is promoting a specific business model that does not lead to better outcomes for the retail customer. This stands in stark contrast to the stated goal of improving competition, the experience of retail customers and transparency.

Simultaneously, the Commission proposes to accelerate changes adopted under the MDI Rules with respect to round lot and odd lots.<sup>1</sup> Here too, the definition of what constitutes a round or odd lot is a moving target, based on price. It is the position of the Commission that new rules as to what constitutes a round lot will result in better quality order execution. To that point, the Commission cites a simulation in March 2022, using exchange direct data feed from MIDAS.

Price	Lot Size (Shares)	% Of Times Consolidator Feed Price Improved Over SIP Feed	% Of Times Consolidator Feed Price Worsened Over SIP Feed
\$250.01 - \$1,000	40	21%	0.1%
\$1,000.01 - \$10,000	10	65%	0.1%
\$10,000.01	1	-	-

The Commission’s proposed third tier, stocks priced over \$10,000.01 with a round lot of one share, did not appear in the simulation.

While the percentage of time there were improvements are worth noting, the simulation fails to address the amount by which execution prices improved; the relative costs that will come with more data being exchanged; the potential estimated costs of adding increased customer support to explain how round lots vs odd lots are calculated; the impact on size improvement; or, how proposed changes in tick sizes, which were created under 100 share round lots, may factor into results.

<sup>29</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 31.

<sup>30</sup> 17 CFR Part 242. RIN 3235-AN23. Securities and Exchange Commission. Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders. Page 33.

Also, the Commission makes no mention of potential customer confusion with respect to round lot size adjustments. Currently, retail customers, especially those trading options, understand one option contract represents one hundred shares. Frequently, it is simply referred to as a “round lot.” Changes in round lot sizes will most certainly create confusion in this area for retail investors. Furthermore, the Commission failed to note how much actual volume takes place in any of the three proposed tiers and what challenge, if any, changes to round lot definitions would address. Most importantly, as is the case throughout these proposals, the Commission does not specify from whom the data being used was obtained nor does it present a complete economic analysis, making it impossible for the rest of the industry to validate any findings. Therefore, much like we cautioned with respect to changes in pricing, we have similar concerns with respect to odd vs. round lots.

### Conclusion

We advocate for adding transparency to market operations wherever possible and support efforts to improve the customer experience. However, we do not believe that this proposal accomplishes those goals. This proposal represents an experiment with unknown, and likely adverse, consequences.

We are concerned that the changes in tick sizes and round lot definitions will confuse retail customers, and may ultimately reduce the general public’s trust of the market. That challenge is compounded by the speed at which tick sizes and round lot definitions can change. What was a tick increment today may change tomorrow. Our goal is to enable retail customers to be self-directed and less reliant on customer support specialists.

Because of the above stated concerns and the potential compounding effects enactment of other proposed rule changes may create, we do not support this proposal other than changes as noted previously with respect to tick constrained stocks.

## **V. Conclusion**

We would again like to thank the Commission for the opportunity to comment on the above proposals. As we tried to make clear in our response, we take our obligations to our customers very seriously. We are incredibly proud of the experience we have been able to provide to them. That experience has not simply been happened upon. Rather, we have worked tirelessly to create a barrier-free, easily understandable, low cost, and efficient customer experience. We also want to fiercely defend this experience, against any experiment with unknown outcomes, which would make the current experience very difficult to maintain.

Our efforts resulted in the greatest level of retail investor participation in the history of markets. We attained levels of liquidity once thought impossible. Fast, dependable and efficient markets fostered engagement and that engagement was rewarded.

As Commissioner Pierce stated, “I doubt that our markets require a significant overhaul now. They have weathered quite well several remarkable stresses over the past three years, and retail and institutional investors continue to experience unparalleled execution quality, particularly in our equity markets. There is no emergency in our markets that demands a comprehensive revamping of how broker-dealers and market makers handle customer order flows.”<sup>31</sup>

We echo the Commissioner’s sentiments and urge the entire Commission to do so as well.

Sincerely,



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JJ Kinahan  
President  
tastytrade, Inc.

Cc: The Honorable Gary Gensler, Chairman, SEC  
The Honorable Caroline A. Crenshaw, Commissioner, SEC  
The Honorable Hester M. Peirce, Commissioner, SEC  
The Honorable Jaime Lizárraga, Commissioner, SEC  
The Honorable Mark T. Uyeda, Commissioner, SEC  
Director Haoxiang Zhu, Division of Trading and Markets

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<sup>31</sup> Pierce, Hester M. Statement on Disclosure of Order Execution Information. December 14, 2022.