CITADEL | Securities

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Ms. Vanessa A. Countryman
Secretary
Securities and Exchange Commission
100 F Street NE
Washington, DC 20549–1090

Re: Proposed Rule on Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders (File No. S7-30-22)

We appreciate the opportunity to provide comments to the Securities and Exchange Commission (the "Commission") on its proposal to overhaul Regulation NMS, which establishes the regulatory framework for the U.S. equities market (the "Proposal").[1]

The U.S. equities market is the most liquid and competitive in the world, with exchanges, alternative trading systems, and broker-dealers all innovating to deliver the best execution quality to investors. The competitive diversity and resulting efficiency of this market has helped to foster groundbreaking companies and technology that have been vital ingredients to our global economic strength. While targeted refinements merit consideration, including with respect to certain discrete aspects of the regulatory framework that are addressed in this Proposal, a dramatic overhaul is certainly not warranted.

And yet, this Proposal contemplates such a dramatic overhaul, with the Commission rewriting much of Regulation NMS and risking unintended consequences that it has failed to adequately consider. In doing so, the Commission appears to be motivated by one overarching objective: to increase the market share of exchanges by reducing off-exchange execution of retail orders. In particular, the Commission believes that there is too much off-exchange retail trading and asserts that this *must* be due to a defect in the regulatory framework that hinders exchange competition.[2] Having already reached the conclusion that some sort of defect exists, the Commission casts about to identify one, ultimately electing to argue that off-exchange market centers have a competitive advantage because they are able to trade in any increment, whereas exchanges are constrained by the minimum quoting increment of one cent. But the Commission's central premise is entirely false.

First, analyzing data for stocks that have quoted spreads that are much wider than the minimum quoting increment clearly demonstrates that the minimum quoting increment is not the cause of off-exchange retail trading, as wholesale broker-dealers provide far superior execution quality even in stocks that are not constrained by the minimum quoting increment at all. The stark reality

[1] 87 FR 80266 (Dec. 29, 2022), available at: https://www.govinfo.gov/content/pkg/FR-2022-12-29/pdf/2022-27616.pdf.

[2] *See* Proposal at 80273-74 ("the Commission is concerned that these retail orders are not exposed to competitive forces on the public market [. . .] 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 finer sub-penny increments than exchanges and ATSs factors into the increasing percentage of equity volume that is executed off-exchange.").

is that wholesale broker-dealers provide significantly better execution quality than exchanges for retail order flow (in no small part because of decades of significant investment in pricing, risk management, and order routing capabilities), and the minimum quoting increment is completely irrelevant to that dynamic.

Second, the Proposal glosses over the fact that the Commission has approved exchange retail programs that facilitate trading at pricing increments inside the minimum quoting increment of one cent (including 1/10 of a cent and midpoint).[3] This means that market centers are *already* on a level playing field when it comes to executing segmented retail orders, and the Commission's Proposal actually preferences exchanges over other market centers.

Third, the misguided desire to establish a minimum trading increment that is *equal to* the minimum quoting increment results in quoting increments that are extremely small (e.g. 1/10 and 2/10 of a cent for many stocks). Although there are many well-documented problems created by extremely small quoting increments, including with respect to quoted depth, price volatility, and market resiliency, the Proposal does not seriously consider these harms. The creation of arbitrarily small quoting increments will materially reduce displayed liquidity, fuel investor panic in turbulent markets, and make it harder for companies to raise capital. In addition, the Proposal glosses over the fact that, although exchange access fees are being reduced on an absolute basis, the ratio of the access fee to the minimum quoting increment will actually increase for most traded volume. This approach is explicitly designed by the Commission to minimize the overall commercial impact of the Proposal on exchange revenue models, even though the relatively high access fees may discourage strategies that rely upon accessing displayed liquidity.

Ultimately, the Commission appears glaringly uncertain regarding the cumulative market and broader economic impact of making significant changes to quoting increments, trading increments, and access fees all at once. Market structure policy must be carefully designed to facilitate the allocation of capital, support price discovery, and enable companies to raise money efficiently. Instead, this Proposal subjects the world's preeminent equities market to a poorly considered experiment, with no built-in ability to unwind the changes if negative consequences result. Those risks do not come close to outweighing any putative benefits. Instead, we urge the Commission to safeguard our markets and investors by engaging in reasoned rulemaking as required by the Securities Exchange Act of 1934 (the "Exchange Act") and principles of administrative law, and by seriously considering the reasonable, far less risky alternatives developed by market participants on these topics, including our proposed alternative approach detailed in Section VI below.

[3] *See, e.g.,* https://www.iexexchange.io/products/retail-program; and https://www.nyse.com/publicdocs/nyse/markets/liquidity-programs/RLP_Fact_Sheet.pdf.

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I. The Proposed Minimum Quoting Increments Will Harm Investors and Damage U.S. Equities Markets

In October 2016, the Commission launched a two-year tick-size pilot program (the "Tick Size Pilot") designed to test whether *increasing* the minimum quoting increment from one cent to five cents improved liquidity conditions for certain small- and middle-capitalization companies publicly traded in the U.S. equities market. Unfortunately, the initiative was an abject failure, as liquidity conditions worsened and investor trading costs dramatically increased. Even though the stocks included in the pilot only accounted for approximately 3.5% of total market volume (by shares) in aggregate, estimates suggest that U.S. investors lost nearly $1 billion due to this failed experiment.[4] As a result, the changes were completely unwound by the Commission in October 2018.

Now, less than five years later, the Commission is once again proposing to make dramatic changes to the minimum quoting increment; this time moving in the opposite direction by *decreasing* it from one cent to 1/10 of a cent, 2/10 of a cent, or 1/2 of a cent for many stocks. However, in stark contrast to the far more modest Tick Size Pilot, these changes would impact over 80% of total market volume (by shares) and would be implemented without a pilot, creating heightened risk of significant long-term investor harm in the event the Commission once again miscalculates. More concerning, the Commission's economic justification for making these changes is largely limited to the following crude, flawed logic: *since the Tick Size Pilot was a failure, doing the opposite must be correct*. In addition, this flawed logic is directly contrary to prior Commission economic analysis finding that too small a minimum quoting increment negatively impacts market liquidity and efficiency.[5] This type of arbitrary decision-making is highly likely to irreversibly damage the unparalleled efficiency and liquidity of the U.S. equities market because it so carelessly ignores the harms resulting from too fine of a minimum quoting increment.

A. Extremely Small Minimum Quoting Increments Will Harm Investors

Setting a minimum quoting increment involves a careful balance. If the minimum quoting increment is too large, publicly quoted prices for stocks may be artificially constrained, increasing investor transaction costs as witnessed in the Tick Size Pilot. However, if the minimum quoting increment is too small, a different set of problems result which can also increase investor

[4] *See* "Congress' Failed Stock Market Experiment Cost Investors $900 Million," B. Alpert (Sept. 14, 2018), available at: https://www.barrons.com/articles/electric-vehicle-subsidies-are-driving-a-wedge-between-the-us-and-europe-51673993337.

[5] *See* 70 FR 37496 (June 29, 2005) at 37551. In Regulation NMS, the Commission identified a variety of problems associated with sub-penny quoting, including stepping ahead of competing limit orders by economically insignificant amounts, decreasing displayed liquidity (including quoted depth), increasing quote flickering, and reducing customer protections. The Commission fails to adequately explain why it is taking a diametrically opposite position in this Proposal. *See also* "Self-Regulatory Organizations; New York Stock Exchange LLC; Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 1, to Make Permanent the Retail Liquidity Program Pilot" (Feb. 15, 2019) at 60, available at: https://www.sec.gov/rules/sro/nyse/2019/34-85160.pdf.

transaction costs and negatively impact overall market efficiency and capital formation. These include:[6]

- **Decreasing displayed liquidity**. Reducing the minimum quoting increment creates new price levels that fragment displayed liquidity.[7] When the minimum quoting increment is extremely small, investors face an increase in routing complexity and transaction costs, as excessive fragmentation can reduce overall quoted depth.

  Size at the NBBO

  The fragmentation of displayed liquidity results in less size being available to trade at the best prices (i.e. the national best bid and offer ("NBBO")). This reduction in available size at the NBBO means that larger orders will be more complex to execute, as filling the entire order will require accessing multiple price levels, which can increase price impact. This is particularly problematic for institutional investors, such as pension funds, endowment funds, and mutual funds.[8]

  Based on the observed relationship between the average quoted spread and size available at the NBBO in the U.S. equities market, we estimate that the Proposal will have the following adverse impact on size available at the NBBO:[9]

Implementation Stage[10]	**Size at the NBBO for impacted stocks** (compared to pre-Proposal)
First: quoting increment reduced to 1/2 of a cent	-82.3%
Second: quoting increment reduced to 2/10 of a cent	-89.7%
Third: quoting increment reduced to 1/10 of a cent	-92.8%

  Aggregate Quoted Depth

  Importantly, too small of a minimum quoting increment can also decrease aggregate quoted depth, as incentives to post displayed liquidity are reduced since displayed quotes can be

[6] We note these concerns are not only relevant for the 1/10 of a cent and 2/10 of a cent categories in the Proposal, but also the 1/2 of a cent category given that it is proposed to apply to far too many stocks. *See* Section VI for our proposed alternative approach.

[7] *See* J. Angel, L. Harris and C.S. Spatt, 2010. Equity Trading in the 21st Century at page 50, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1584026.

[8] *Id.*

[9] Our analysis uses SIP data on average quoted spreads and average quoted size from January to December 2022.

[10] Proposal at 80284.

improved upon (or jumped) by economically insignificant amounts. This can discourage liquidity provision generally, including by market makers and institutional investors.[11]

Experience with a reduction in minimum quoting increments in Japan in 2014 confirms these economic harms. For example, when the minimum quoting increment was reduced by a factor of 10 for certain stocks (similar to the reduction from 1 cent to 1/10 of a cent proposed by the Commission), quoted size at the best prices declined by up to 97% and cumulative quoted depth measured across 20¥ (corresponding to 20 price levels following the change in tick size) declined by at least 50% when measured a few months later. We provide specific examples from our analysis of that event below:[12]

Symbol	Tick Size Change	Size at the NBBO	Total Quoted Depth
Toyota	[10 ¥ → 1 ¥]	-97.1%	-59.5%
Softbank	[10 ¥ → 1 ¥]	-95.9%	-54.3%
West JR	[10 ¥ → 1 ¥]	-83.5%	-56.0%

- **Impairing market efficiency and resiliency**. The liquidity-related harms detailed above may be particularly problematic for less liquid symbols (given existing concerns around quoted depth), suggesting the Proposal is inconsistent with prior Commission efforts to improve liquidity conditions and overall market efficiency for this segment.[13]

  An extremely small minimum quoting increment can also be expected to result in less resilient liquidity during times of market stress, which harms investor confidence and execution quality. In addition to exacerbating a lack of quoted depth, market stress events can cause quoted spreads to widen significantly. This means that, during such periods, many symbols would be trading with far more price levels intra-spread than contemplated under the Proposal, thereby further increasing the liquidity-related harms detailed above.[14]

  To illustrate this concern, we applied the smaller minimum quoting increments as set forth in the Proposal based on March 2022 data.[15] We then analyzed what would have happened to those symbols assigned a smaller minimum quoting increment under the Proposal during the period of market stress in March 2020. The results show that the vast majority of these

[11] *See* O'Hara, M., G. Saar, and Z. Zhong, 2014. Relative tick size and the trading environment. Working Paper. Cornell University at page 3, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2463360.

[12] Our analysis uses historical data from November 2013 to March 2014 (with the tick changes occurring in January 2014).

[13] *See, e.g.,* "SEC Issues Statement on Market Structure Innovation for Thinly Traded Securities," available at: https://www.sec.gov/news/press-release/2019-217.

[14] The Commission acknowledges in the Proposal that 7.4% of total market volume could be executed when a symbol has more than ten price levels intra-spread (due to a symbol trading at a spread that is wider than the average used to compute the minimum quoting increment). While concerning, this analysis solely considered trading during March 2022, and did not consider results during a period of market stress. Proposal at 80324.

[15] We used historical data regarding average quoted spreads and average quoted size to estimate which symbols would be assigned to the 1/10 of a cent category.

symbols experienced such a dramatic increase in quoted spreads during March 2020 that they would have been trading with far more price levels intra-spread than contemplated under the Proposal. For example, we expect Apple (AAPL) would be assigned a 1/10 of a cent minimum quoting increment under the Proposal, yet the stock had a quoted spread of more than 4 cents during March 2020, meaning that there would have been more than 40 price levels intra-spread during that period.[16] The full results demonstrate that this would have been a widespread issue:[17]

Minimum Quoting Increment Category (per the Proposal)	**Median # of Price Levels Intra-Spread During March 2020** (if the Proposal were implemented)
$.001	22.16
$.002	21.46
$.005	12.48

Creating a framework that results in many stocks trading with more than 20 price levels intra-spread during a period of market stress should be expected to result in less resilient liquidity, and may actually further widen quoted spreads to the detriment of all market participants. Indeed, when analyzing the results of the Tick Size Pilot, Commission staff conceded that "more than 15 ticks intra-spread" may have problematic effects on liquidity.[18]

- **Increasing quote flickering**. As detailed above, an extremely small minimum quoting increment enables quote-jumping by economically insignificant amounts. This can lead to a less stable NBBO, with the best price changing rapidly as liquidity providers adjust quotes at 1/10 of a cent increments. The resulting increase in message traffic can create a feedback loop, as market making models more frequently update resting quotes in response to the higher message traffic and a less stable NBBO to maintain queue priority.[19] The

[16] We note March 2020 highlights another important concern that relates to the Proposal's exclusive reliance on quoted spreads to determine minimum quoting increments. Specifically, the Proposal contemplates that minimum quoting increments would be updated based on data from the last month of each calendar quarter (i.e. March, June, September, and December; Proposal at 80358). This means that a volatile month (e.g. March 2020) can lead to the minimum quoting increment being set for the next quarter based on quoted spreads that are unrepresentative of typical trading conditions. Using our AAPL example above, it appears the minimum quoting increment would have been set at 1 cent for Q2 2020 based on the volatility of March 2020, even though the typical AAPL quoted spread would result in a 1/10 of a cent minimum quoting increment under the Proposal. Importantly, once the minimum quoting increment is set at a wider level based on atypical market events, the Proposal restricts not only quoting, *but also trading*, in smaller increments. Therefore, the Proposal could significantly disrupt trading in certain stocks long after a market stress event has passed.

[17] Our analysis uses historical data on average quoted spreads and average quoted size from March 2020 and March 2022.

[18] Yashar H. Barardehi, Peter Dixon, Qiyu Liu, and Ariel Lohr, Tick Sizes and Market Quality: Revisiting the Tick Size Pilot (Dec. 14, 2022) at 31, available at: https://www.sec.gov/dera/staff-papers/working-papers/dera_wp_tick-sizes-and-market-qualityrevisiting-tick-size-pilot.

[19] The Commission incorrectly and cursorily asserts, without evidence or support, that advancements in technology obviate these concerns, making them "largely no longer relevant today." Proposal at 80279, FN 195. As further evidence to the contrary, note the significant increase in quotes that occurred in 2019 in the Eurodollar futures

cumulative impact is increased price volatility, flickering quotes, and investor confusion. A less stable NBBO can also add complexity for institutional order routing algorithms (which can reset when the NBBO changes) and for publishing execution quality statistics.

- **Further increasing the importance of proprietary data feeds**. The reduction in size available at the NBBO and the fragmentation of liquidity across many new price levels increases the importance of full depth-of-book data from the exchanges. This appears directly contrary to the Commission's recent (but still unimplemented) Market Data Infrastructure Rule, which sought to democratize access to market data, but which only requires data consolidators to publish depth-of-book data that is five price levels from the NBBO.[20] While this was expected to provide information on all available liquidity within 5 cents of the NBBO, it now will only cover available liquidity within 1/2 of a cent of the NBBO for many symbols, rendering the requirement largely meaningless. The importance of subscribing to proprietary data feeds will only increase as a result of this Proposal, an outcome the Commission has previously indicated is inconsistent with Section 11A of the Exchange Act.[21]

- **Adversely impacting customer protections**. FINRA Rule 5320 (the so-called Manning Rule) protects customer limit orders by requiring a minimum amount of price improvement for a firm to execute an order on a proprietary basis while holding an unexecuted customer limit order. This minimum amount of price improvement is currently set at one cent for customer limit orders of greater than or equal to $1 in NMS stocks (in order to equal the minimum quoting increment). However, to the extent that the minimum quoting increment is reduced by the Commission for certain stocks, FINRA must update the Manning Rule in an equivalent manner, as requiring one cent of price improvement for stocks that are quoted in 1/10 of a cent increments would greatly increase the cost and complexity of compliance, and would likely disincentivize (or eliminate) the handling of customer limit orders by wholesale broker-dealers.[22] Given that the Manning Rule must be updated in the event the minimum quoting increment is reduced, the Commission should consider the impact of this change in the Proposal.

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market. *See* "Futures Exchange Reins In Runaway Trading Algorithms," WSJ (Oct. 29, 2019), available at: https://www.wsj.com/articles/futures-exchange-reins-in-runaway-trading-algorithms-11572377375.

[20] 86 FR 18596 (April 9, 2021) at 18602, available at: https://www.govinfo.gov/content/pkg/FR-2021-04-09/pdf/2020-28370.pdf.

[21] *Id.* at 18600 ("The Commission is concerned that the two different methods of data dissemination—SIP data provided pursuant to Regulation NMS and the Equity Data Plans and proprietary data products provided by the exchanges—have contributed to the development of a two-tiered data market that raises fundamental concerns about the ability of the national market system to continue to ensure that the goals of Section 11A of the Exchange Act are being met.")

[22] For example, wholesale broker-dealers help maximize customer non-marketable limit order ("NMLO") fill rates by (i) managing the display of customer NMLOs across multiple venues at the same time, (ii) handling NMLOs near the open and close, and (iii) providing supplemental liquidity beyond what may be available on exchange.

Separately, since fragmenting displayed liquidity leads to less size being available to trade at the NBBO, the Proposal undermines the customer protection purposes of the NBBO (which is intended to establish a transparent, objective standard against which investors can measure execution quality). In addition, since customer limit orders must be posted on-exchange under Commission Rule 604, larger customer limit orders will stand-out in comparison to the smaller-sized orders posted by other market participants. Posted customer limit orders can also be queue jumped by economically insignificant amounts, undermining an important customer protection purpose of the order protection rule.

- **Increasing message traffic**. The harms detailed above lead to an increase in total message traffic, as order cancellations and modifications increase with an extremely small minimum quoting increment. A material increase in total message traffic increases costs for all market participants, including due to the resulting higher fees charged by industry utilities, such as the Consolidated Audit Trail ("CAT") and the Securities Information Processor ("SIP").

- **Necessitating the broad use of Intermarket Sweep Orders ("ISOs").** With the significant reduction in available liquidity at the NBBO, investors will need to access liquidity beyond the NBBO more often to fulfill their liquidity needs, and thus will be required to broadly adopt the use of ISOs, forcing them to bear the costly complexity and regulatory burden associated with their use.

These potential harms resulting from a minimum quoting increment that is too small are no surprise. For the Commission itself has consistently warned of the same harms prior to this Proposal.[23] Similarly, academic research has detailed the careful balance that must be struck when determining an optimal minimum quoting increment.[24] However, in this Proposal, the Commission fails to adequately address these concerns or articulate a rational basis for setting the minimum quoting increments in the manner proposed. In particular, the Commission did not conduct any analysis regarding the expected impact on displayed liquidity (both at the NBBO and aggregate quoted depth), including with respect to less-liquid symbols and during times of market stress. We set forth such an approach in Section VI below, which is sorely lacking in the Commission's Proposal.

[23] *See, e.g.,* 66 FR 38390 (July 24, 2001) ("Subpenny trading may have an adverse effect on the operation of 'customer first' rules and the use of limit orders. Further, to the extent that 'stepping-behind' activity is facilitated by subpenny orders, it may discourage market making."); and 70 FR 37496 (June 29, 2005) ("Even assuming that quoting in subpenny increments would reduce spreads, the Commission continues to believe, on balance, that the costs of sub-penny quoting are not justified by the benefits."). Investor confusion could also increase as a result of quoting in 1/10 of a cent increments.

[24] *See, e.g., supra* note 7; and Dyhrberg, Anne Haubo and Foley, Sean and Svec, Jiri, When bigger is better: The impact of a tiny tick size on undercutting behavior (June 11, 2019), available at: https://ssrn.com/abstract=3194932 ("We show that tiny tick sizes are not optimal").

B. The Proposed Minimum Quoting Increments are Arbitrary and Harmful

The Proposal would reduce the minimum quoting increment for over 4,000 symbols, with the impacted symbols divided into three categories:[25]

- Tick-constrained symbols, which the Commission defines as having an average quoted spread (i.e. the difference between the best bid and offer prices) less than or equal to 1.1 cents.[26] The minimum quoting increment would eventually be reduced to 1/10 of a cent for these symbols that subsequently traded with an average quoted spread of less than or equal to 8/10 of a cent. As a result, some symbols would now have eight price levels within the average quoted spread.[27]

- Near-tick-constrained symbols, where the average quoted spread is greater than 1.1 cents but less than or equal to 2 cents. The minimum quoting increment for these symbols would eventually be reduced to either 2/10 of a cent (if the average quoted spread is less than or equal to 1.6 cents) or 1/2 of a cent. Again, this means some symbols would now have eight price levels within the average quoted spread.[28]

- Wider spread symbols, where the average quoted spread is greater than 2 cents but less than or equal to 4 cents. The minimum quoting increment for these symbols would be reduced to 1/2 of a cent. Once again, this means some symbols would now have eight price levels within the average quoted spread.[29]

(i) Tick-constrained symbols

As defined by the Commission, tick-constrained symbols have an average quoted spread that is less than or equal to 1.1 cents, which could indicate that market participants would offer more competitive pricing (i.e. a smaller quoted spread) if the minimum quoting increment were reduced. However, in light of the harms detailed above resulting from a minimum quoting increment that is too small (of which the Commission previously warned),[30] quoted spread cannot be the sole

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[25] We note that the minimum quoting increment does not appear to be an independent variable in this Proposal. Instead, the proposed minimum quoting increment is being almost entirely driven by another issue: the Commission believes that there is too much off-exchange retail trading and that this can be reduced by establishing a minimum trading increment that is *equal to* the minimum quoting increment.

[26] Note that we recommend taking into account quoted spread, available liquidity at the NBBO, and total trading volume when determining whether a stock is "tick-constrained."

[27] For example, a symbol with a quoted spread of 8/10 of a cent and a minimum quoting increment of 1/10 of a cent would have eight price levels within the best bid and offer prices.

[28] For example, a symbol with a quoted spread of 1.6 cents and a minimum quoting increment of 2/10 of a cent would have eight price levels within the best bid and offer prices.

[29] For example, a symbol with a quoted spread of 4 cents and a minimum quoting increment of 1/2 of a cent would have eight price levels within the best bid and offer prices.

[30] *See* 70 FR 37496 (June 29, 2005) at 37551.

consideration; instead, it is important to carefully consider (a) whether a symbol has sufficient liquidity to support a reduction,[31] and (b) if so, how many price levels to introduce.

Market participants have acknowledged and considered these necessary threshold questions. For example, with respect to the question of whether a symbol has sufficient liquidity to support a reduction in the minimum quoting increment, CBOE proposed a tick-reduction framework that takes into account quote-to-trade ratios and daily notional turnover.[32] In considering the critical question of liquidity, CBOE's proposal resulted in the minimum quoting increment changing for far fewer symbols than proposed by the Commission.

With respect to the question of how many price levels to introduce, NASDAQ,[33] CBOE,[34] and MEMX[35] all recommended that the smallest minimum quoting increment be 1/2 of a cent. We are not aware of any proposal put forward to the Commission that supports reducing the minimum quoting increment to 1/10 or 2/10 of a cent given the number of price levels that would be introduced.

The Commission completely disregards existing research and analysis in proposing to define "tick-constrained" based solely on quoted spread (regardless of liquidity characteristics) and to reduce the minimum quoting increment to 1/10 or 2/10 of a cent, resulting in up to eight price levels within the quoted spread. In doing so, the Commission fails to put forward a reasoned basis for defining "tick-constrained" in this manner or selecting 1/10 and 2/10 of a cent as the appropriate quoting increments (thereby rejecting the various market participant proposals)[36] beyond vague unsupported claims of "better market quality."[37] The Commission fails to acknowledge (or otherwise conveniently ignores) the trade-off between quoted spread and depth. Nor did the Commission properly analyze whether defining "tick-constrained" in this manner or establishing 1/10 or 2/10 of a cent quoting increments gives rise to the various harms detailed above.

Instead, the Commission's economic analysis is limited to a self-serving and misguided review of the Tick Size Pilot.[38] As noted, this pilot was a failure, as increasing the minimum quoting

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[31] Relevant metrics could include average quoted size at the NBBO, average daily volume, and average queue lengths.

[32] Cboe Proposes Tick-Reduction Framework to Ensure Market Structure Benefits All Investors, available at: https://www.cboe.com/insights/posts/cboeproposes-tick-reduction-framework-to-ensuremarket-structure-benefits-all-investors/. *See also* Cboe comment letter (Feb. 28, 2023), available at: https://www.sec.gov/comments/s7-30-22/s73022-20158236-326301.pdf.

[33] Nasdaq Intelligent Tick Proposal, available at: https://www.nasdaq.com/docs/2019/12/16/Intelligent-Ticks.pdf.

[34] *Supra* note 32.

[35] MEMX Tick Constrained Securities, available at: https://memx.com/wp-content/uploads/MEMX-Market-Structure-Report-Tick-Constrained-Securities.pdf.

[36] Indeed, the Commission's acknowledgment of the many other proposals put forward by market participants, without identifying compelling reasons to reject them, makes this Proposal resemble a concept release.

[37] Proposal at 80281.

[38] Proposal at 80318.

increment from one cent to five cents harmed liquidity and raised investor trading costs for many small- and middle-capitalization stocks, particularly those that previously traded with a quoted spread of less than five cents. Therefore, when the minimum quoting increment reverted to one cent at the end of the pilot, it follows that liquidity conditions for these stocks meaningfully improved.

However, in a surprising twist, the Commission attempts to find support for this Proposal by ascribing significance to the specific reduction in minimum quoting increment that occurred at the end of the Tick Size Pilot (i.e. the reversion from five cents to one cent). Specifically, the Commission asserts that the end of the pilot demonstrates that "for stocks with fewer than approximately 2 ticks intra-spread, a 1:5 reduction in the tick size generally improved market quality"[39] and since "[t]his is a similar reduction in the tick size to what the proposal would offer [. . .] the Commission believes it is reasonable to extrapolate from this analysis that these stocks would see an improvement in liquidity."[40] Leaving aside that this Proposal actually results in up to *eight* price levels for many symbols, the notion that the Tick Size Pilot proves that regulators should reduce the minimum quoting increment by a factor of five for tick-constrained symbols does not stand up to the most basic scrutiny.[41]

To illustrate the logical fallacy, consider if the Tick Size Pilot had increased the minimum quoting increment to fifteen cents instead of five. This would have negatively impacted a greater range of stocks (particularly those with quoted spreads of less than fifteen cents), and predictably liquidity conditions in those stocks would have meaningfully improved at the end of the pilot when the changes were reversed. However, this would not suggest that regulators should always reduce the minimum quoting increment for tick-constrained symbols by a factor of *fifteen*. Similarly, the end of the Tick Size Pilot provides no basis for suggesting that regulators should always reduce the minimum quoting increment for tick-constrained symbols by a factor of five.[42]

The Tick Size Pilot merely reverted to the *status quo* after a failed experiment. Importantly, the termination of the pilot simply allowed stocks that were previously trading well with quoted spreads of less than five cents to resume trading as they had before their spreads were artificially increased. This reversion provides no information on what would be expected to occur if minimum quoting increments were further reduced to levels that have never before been tested. As such, it does not provide the Commission with a reasonable basis to reduce the minimum quoting increment by a factor of five without specifically considering the impact of 1/10 and 2/10 of a cent

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[39] Proposal at 80317.

[40] *Id.*

[41] Furthermore, the Tick Size Pilot only covered a specific segment of the market (i.e. small- and middle-capitalization stocks).

[42] We note that the Commission appears to adopt this line of reasoning only when convenient. For example, the end of the Tick Size Pilot also involved unwinding the harmonization of quoting and trading increments, suggesting that such harmonization was undesirable according to the Commission's logic above. Nonetheless, this Proposal would harmonize quoting and trading increments and does not address this apparent inconsistency.

quoting increments on market liquidity, efficiency, and capital formation.[43] If anything, it demonstrates the importance of taking into account metrics other than quoted spread when setting minimum quoting increments. The Commission has failed to conduct that analysis in this Proposal.

(ii) Near-tick-constrained and wider-spread symbols

The Commission attempts to apply the same flawed reasoning to explain the proposed reductions in the minimum quoting increment for near-tick-constrained and wider spread symbols, but its decision and underlying analysis is even more devoid of rigor. For those symbols that do not appear to be directly impacted by the current minimum quoting increment of one cent, the Commission repeatedly acknowledges that the impacts are "uncertain," even based on its analysis of the end of the Tick Size Pilot.[44] Often, the Commission appears to entirely overlook that these symbols are actually covered by the Proposal, incorrectly suggesting instead that the Proposal will not "dispers[e] the liquidity of stocks that are not tick-constrained and trade with wider spreads." At the same time, however, the Commission concedes that "assigning a small minimum pricing increment to a stock that has a wider spread can be harmful to displayed liquidity."[45]

In short, the Commission provides no justification for significantly narrowing the minimum quoting increment for symbols that have quoted spreads of two, three, or four cents (i.e. where a one-cent quoting increment is not binding). Notably, the Commission is unable to point to a single proposal from market participants (including exchanges) that supports reducing the minimum quoting increment for symbols that are not tick-constrained.

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[43] For example, the Tick Size Pilot was intended to "provide a data-driven approach to evaluate whether certain changes to the market structure for Pilot Securities would be consistent with the Commission's mission to protect investors, maintain fair, orderly and efficient markets and facilitate capital formation." Release No. 34-74892 (May 6, 2015), available at: https://www.sec.gov/rules/sro/nms/2015/34-74892.pdf.

[44] *See, e.g.,* Proposal at 80321 ("For stocks in the middle two bins, the effect of lowering the tick size on realized spreads is unclear.").

[45] Proposal at 80280.

II. The Proposed Minimum Trading Increment is Arbitrary and Solely Designed to Increase Exchange Market Share

Regulation NMS established a regulatory framework designed to promote venue competition, where exchanges, ATSs, and broker-dealers vigorously compete for order flow based on delivering superior execution quality to end investors.[46] However, in this Proposal, the Commission makes clear it is not pleased based on its own prior policy decisions that, as a result of venue competition, the vast majority of retail transactions are currently executed off-exchange.[47] This displeasure leads the Commission to embark on a misguided search for elements of the regulatory framework that can be changed in order to increase exchange market share, even though the Commission is unable to identify any specific harm resulting from the current market structure. Ultimately, the Commission elects to argue that off-exchange market centers have a competitive advantage compared to exchanges because they are able to trade in any increment, whereas exchanges are constrained by the minimum quoting increment of one cent.[48] The Proposal then sets a minimum *trading* increment that is equal to the minimum *quoting* increment.

This line of argument is fundamentally flawed. As detailed below, analyzing data for stocks that have quoted spreads that are much wider than the minimum quoting increment clearly demonstrates that the minimum quoting increment is not the cause of off-exchange retail trading. In addition, all market centers are *already* on a level playing field with respect to trading since longstanding exchange retail programs facilitate trading at pricing increments inside the minimum quoting increment of one cent (including 1/10 of a cent and midpoint). As a result, the Proposal inappropriately favors exchanges over other market centers in a manner that is anti-competitive and inconsistent with Section 11A of the Exchange Act.

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[46] 70 FR 37496 (June 29, 2005) at 37498 ("The NMS is premised on promoting fair competition among individual markets, while at the same time assuring that all of these markets are linked together, through facilities and rules, in a unified system that promotes interaction among the orders of buyers and sellers in a particular NMS stock.") and 37499 ("Since Congress mandated the establishment of an NMS in 1975, the Commission frequently has resisted suggestions that it adopt an approach focusing on a single form of competition that, while perhaps easier to administer, would forfeit the distinct, but equally vital, benefits associated with both competition among markets and competition among orders."). Under Regulation NMS, all market centers – exchanges, ATSs, and broker-dealers – are prohibited from quoting at more granular levels than the minimum quoting increment. Similarly, all market centers are permitted to facilitate trading at any price.

[47] *See* Proposal at 80273 ("the Commission is concerned that these retail orders are not exposed to competitive forces on the public market.") and Proposal at 80273-4 ("these retail orders are not publicly displayed and do not contribute to the price competition and discovery mechanism of the lit markets."). We note the Commission does not present any evidence as to how publicly disseminated retail trades do not contribute to "price competition and discovery" nor explain why only retail trades are being targeted by this Proposal, rather than all off-exchange trading. In addition, we note that wholesale broker-dealers route a material percentage of marketable retail orders, and the vast majority of non-marketable retail orders, to exchanges and ATSs for execution.

[48] *See* Proposal at 80336 ("one reason retail broker-dealers route orders to wholesalers is to take advantage of sub-penny price improvement that exchanges and ATSs do not offer.") and 80274 ("The fact that rule 612 does not prohibit sub-penny trading [. . .] makes it more difficult for exchanges and ATSs to compete with OTC market makers for retail order flow.").

A. Current Commission Regulations Establish a Level Playing Field for Trading

As clear evidence of the Commission's inaccurate assertion that the minimum quoting increment is a key driver of off-exchange trading, consider stocks that have quoted spreads that are much wider than the minimum quoting increment of one cent. If the Commission were correct, one would expect to observe exchanges providing better execution quality in these stocks (resulting in less off-exchange trading), as on-exchange liquidity providers are not constrained by the minimum quoting increment at all. In fact, the opposite is true. Based on a review of the top 50 stocks with average quoted spreads of 20 cents or more, data shows that Citadel Securities provided retail investors with more than 13 cents of price improvement per share, compared to less than 4 cents of price improvement per share on exchange.[49] We note this is the only research on this topic of which we are aware, yet the Commission cursorily mentions it in a single footnote without considering its implications.

In addition, exchanges have various means to facilitate trading at pricing increments inside the minimum quoting increment of one cent, clearly demonstrating that all market centers are *already* on a level playing field with respect to trading. *First*, exchanges offer retail liquidity programs that cater to segmented retail order flow[50] and allow trading to occur at 1/10 of a cent increments.[51] Historically, exchanges have indicated that, when considering the competitive playing field between exchange and off-exchange market centers, these retail programs create "a fair balance for the various market participants."[52] This conclusion appears self-evident:

[49] Market Lens: Unlevel Playing Field? What 605s Can Tell Us About Tick Sizes, Citadel Securities (Sept. 8, 2022) at page 3, available at https://www.citadelsecurities.com/news/market-lensunlevel-playing-field-what-605s-can-tell-us-abouttick-sizes/. *See also* Proposal at 80336, FN 644 and Barardehi, Yashar and Bernhardt, Dan and Da, Zhi and Warachka, Mitch, Internalized Retail Order Imbalances and Institutional Liquidity Demand (Nov. 18, 2021) at page 5, available at: https://ssrn.com/abstract=3966059 (finding that "about 35% of off-exchange transactions featuring sub-penny prices are executed at prices more than 1¢ inside the NBBO.").

[50] Importantly, this comparison focuses on segmented retail order flow, as the Commission has repeatedly acknowledged that segmentation is the key driver that allows liquidity providers to offer retail investors more competitive pricing (i.e. better than the quoted spread on-exchange). For example, in its Best Execution proposal, the Commission states: "*because of segmentation* [emphasis added], wholesalers are typically able to execute the marketable orders of individual investors at better prices than they would receive if they were routed to an exchange." 88 FR 5440 (Jan. 27, 2023) at 5493, available at: https://www.govinfo.gov/content/pkg/FR-2023-01-27/pdf/2022-27644.pdf. Separately, in its Order Competition proposal, the Commission states: "[t]he *primary benefit of segmentation* [emphasis added] for individual investors is that it can provide an opportunity for their low-cost orders to be executed at better prices than those generally available on national securities exchanges." 88 FR 128 (Jan. 3, 2023) at 129, available at: https://www.govinfo.gov/content/pkg/FR-2023-01-03/pdf/2022-27617.pdf.

[51] Proposal at 80268, FN 19. *See, e.g.,* https://www.nyse.com/publicdocs/nyse/markets/liquidity-programs/RLP_Fact_Sheet.pdf.

[52] *See* Exemptive Application Pursuant to Rule 612(c) of Regulation NMS – NYSE and NYSE Amex Proposed Retail Liquidity Program (Oct. 19, 2011) at page 9, available at: https://www.sec.gov/rules/sro/nyse/2011/sr-nyse-2011-55-exemptiveapp.pdf.

	Exchange	**Off-Exchange**
Segment retail order flow	✓	✓
Allow trading in 1/10 of a cent increments for segmented retail order flow	✓	✓

Second, exchanges are able to facilitate trading at pricing increments inside the minimum quoting increment of one cent through midpoint orders. The Commission has also approved on-exchange midpoint programs that cater to segmented retail order flow.[53]

Third, exchanges can offer all-in pricing at more granular levels than the quoted spread through the use of fees and rebates, which are set at sub-penny levels.[54] Importantly, on-exchange liquidity providers can display more competitive nominal prices as a result of also receiving a rebate when posting liquidity. Since wholesale broker-dealers must compete against this nominal price, academic research has found that exchanges' use of fees and rebates results in wholesale broker-dealers "compet[ing] at a disadvantage with exchanges."[55]

As clearly demonstrated above, exchanges have various means to facilitate trading at pricing increments inside the minimum quoting increment of one cent, including for segmented retail order flow. As a result, all market centers are *already* on a level playing field with respect to trading, and the minimum quoting increment has nothing to do with where retail order flow is ultimately executed. The stark reality is that wholesale broker-dealers provide significantly better execution quality than exchanges for retail orders.

B. Execution Quality Is Driving Routing Decisions

In light of the level competitive playing field for segmented retail order flow, some may question why the vast majority is executed off-exchange. The answer is that wholesale broker-dealers provide significantly better execution quality for retail orders than exchanges. In Appendix A, we show the dramatic execution quality differential between wholesale broker-dealers and exchanges for market orders (which represent at least 80% of all retail orders by dollar volume according to Commission data). Separately, one retail broker-dealer found that the execution quality provided by wholesale broker-dealers saved their retail clients alone at least $3.4 billion in

[53] *See* https://www.iexexchange.io/products/retail-program.

[54] We note that all-in pricing at more granular levels than the quoted spread also results from an order being executed across multiple price levels on-exchange.

[55] *Supra* note 7 at page 43. *See also* Chao, Yong and Yao, Chen and Ye, Mao, Why Discrete Price Fragments U.S. Stock Exchanges and Disperses Their Fee Structures. Review of Financial Studies, 2019 at page 1, available at: https://ssrn.com/abstract=2530572. Interestingly, the Commission acknowledges elsewhere in its suite of equity market structure proposals that "[t]he use of liquidity rebates have also allowed national securities exchanges to compete with off-exchange market centers for order flow by making it more expensive to offer price improvement over the displayed NBBO." "Disclosure of Order Execution Information," 88 FR 3786 (Jan. 20, 2023) at 3861, FN 774, available at: https://www.govinfo.gov/content/pkg/FR-2023-01-20/pdf/2022-27614.pdf.

2021.[56] In addition to offering better prices, wholesale broker-dealers frequently fill orders for more shares than are publicly displayed,[57] guarantee the execution of all orders received, and bear the costs associated with trade adjustments and trade errors. Furthermore, wholesale broker-dealers often absorb – sometimes at considerable expense – operational risks inherent in the current market structure.

Wholesale broker-dealers also route a material percentage of retail orders to exchanges and ATSs for execution. As such, wholesale broker-dealers develop sophisticated order routing systems to locate the best available liquidity across all market centers, build the required operational risk management controls, cover exchange trading fees, and cover the costs associated with venue membership and market data subscriptions. For example, we estimate that retail broker-dealers would have incurred approximately $2.2 billion in exchange access fees alone during 2022 if marketable retail orders were required to be directly routed to exchanges.[58]

More generally, the major wholesale broker-dealers are able to utilize their trading expertise to provide a tighter spread to retail investors (via price improvement). Wholesale broker-dealers have not only invested billions of dollars in market making capabilities that are used globally across asset classes, but also have dedicated substantial resources towards managing the complexities of retail order flow.

In contrast, data shows that the retail liquidity programs offered by exchanges struggle to even attract liquidity on both sides of the market for retail investors to access.[59] Furthermore, when executions do occur, average execution quality is still materially worse than that provided by wholesale broker-dealers (as measured by effective over quoted spread).[60] The lack of competitiveness of exchange retail programs further demonstrates the Commission's flawed logic in asserting that the minimum quoting increment is disadvantaging exchanges and driving off-exchange trading. If that were true, exchange retail programs should flourish, as trading there can occur at 1/10 of a cent increments. The Commission provides no answer for why this has failed to occur.

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[56] U.S. Equity Market Structure: Order Routing Practices, Considerations, and Opportunities, Charles Schwab (Q2 2022) at page 13, available at: https://content.schwab.com/web/retail/public/about-schwab/Schwab-2022-order-routing-whitepaper.pdf.

[57] We note that estimates suggest taking into account size improvement will at least double the reported price improvement statistics for retail orders. *See* Schwab study at 13; Virtu Financial, "Measuring Real Execution Quality" (June 10, 2021), available at: https://www.sec.gov/comments/265-28/26528-8901054-242178.pdf. Indeed, recent academic research has found that addressing all of these shortcomings in the Rule 605 data may increase reported price improvement statistics for retail orders by approximately 5 times. *See* Battalio, Robert H. and Jennings, Robert H., Why Do Brokers Who Do not Charge Payment for Order Flow Route Marketable Orders to Wholesalers? (Dec. 14, 2022) at 3, available at: https://ssrn.com/abstract=4304124.

[58] We estimate total retail marketable shares using Rule 605 data and our internal data and apply the access fee cap to this figure.

[59] *See, e.g.,* "A Deeper Dive into the NYSE Group Retail Liquidity Programs," NYSE (March 8, 2021), available at: https://www.nyse.com/data-insights/a-deeper-dive-into-the-nyse-group-retail-liquidity-programs.

[60] *Id.*

C. The Proposal Inappropriately Favors Exchanges at the Expense of Retail Investors

Ignoring the execution quality delivered to retail investors under the current market structure, the Commission elects to tilt the playing field in favor of the exchanges in the hope that it will reduce off-exchange retail trading. This is done by attempting to restrict the prices at which trading can occur, with full knowledge that any such restrictions will disproportionately impact the off-exchange market centers where most retail transactions are executed today. For example, with respect to stocks with a minimum quoting increment of 1/2 of a cent or one cent, trading would no longer be permitted to occur at 1/10 of a cent increments under the Proposal, in contrast to how exchange retail programs and wholesale broker-dealers currently operate.[61] While this could make it more difficult for wholesale broker-dealers to offer better prices than quoted on exchange (meaning that off-exchange retail trading may decline), the real negative impact would likely be borne by retail investors through worse execution quality.[62] Ironically, retail broker-dealers would likely continue to send retail orders to wholesale broker-dealers for the various reasons detailed above (including mitigating the significant cost of exchange trading fees), but Commission rules would constrain the ability of wholesale broker-dealers to offer better prices to retail investors.

The likely harm to retail investors exposes the arbitrary and unjustified nature of the proposed restriction on trading, which is explicitly designed to increase on-exchange trading without addressing any specific harm resulting from the current market structure. Unsurprisingly, the Proposal does not assert that retail investors are receiving subpar execution quality from wholesale broker-dealers or that their execution quality would improve under the Proposal. Indeed, the only purported harm identified in the Proposal is that, in the view of the Commission, exchange market share is too low. Given that exchange market share already regularly exceeds 60% of total volume, it is readily apparent that the Commission's focus is not on ensuring "equal regulation" across market centers, but instead on preferencing exchanges over wholesale broker-dealers.

This arbitrary preferencing of exchanges over wholesale broker-dealers is also evident in the Proposal's inordinate focus on retail orders, which achieve the best execution experience in the current market structure as demonstrated by Rule 605 execution quality data. To the extent the minimum quoting increment actually constrained the ability of exchanges to compete for order flow, it would do so for both retail and institutional orders. Indeed, since exchanges do not have the equivalent of a retail program for institutional orders (where trading can occur in 1/10 of a cent increments), one would assume that the Commission would be interested in reducing off-exchange

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[61] We note that the Proposal does not specifically address whether exchange retail programs would be permitted to continue in their current form, notwithstanding the proposed minimum trading increment. If that were the case, trading in 1/10 of a cent increments would be permitted *solely on exchange* for many symbols. In addition, the Order Competition proposal permits all retail orders to trade at 1/10 of a cent increments in the new exchange auctions, regardless of the minimum quoting increment. This appears directly contrary to the Commission's stated policy in this Proposal, as, once again, trading in 1/10 of a cent increments would be permitted *solely on exchange* for many symbols.

[62] The Proposal suggests that approximately $3 billion of retail price improvement may be impacted per year. Proposal at 80307. In addition, as noted above, the Commission did not consider the impact of a minimum quoting increment being set for the next quarter based on quoted spreads that are unrepresentative of typical trading conditions, and the execution quality impact of the corresponding restriction on trading. *See supra* note 16.

institutional trading. Instead, the Proposal attempts to exempt nearly all institutional trading that occurs at off-exchange market centers at better prices than those quoted on exchange, clarifying that the regulatory objective is to change the current competitive dynamic "between OTC market makers, exchanges, and ATSs that compete for *retail liquidity* [emphasis added]."[63] Given the Commission's failure to identify any retail-specific harm resulting from the current market structure, there is no rational basis for the exclusive focus on retail transactions.

The Commission's favoritism toward the exchanges exceeds the Commission's statutory authority. As an initial matter, Congress never authorized the Commission to set the minimum price at which securities may trade. Moreover, in using its authority under the Exchange Act to "facilitate the establishment of a national market system for securities," the Commission is obligated "to assure . . . fair competition . . . between exchange markets and markets other than exchange markets" and to "assure equal regulation of all markets for qualified securities."[64] Those express statutory objectives "necessarily constrain[ ]" the Commission's regulatory authority here.[65]

The Commission justifies the proposed minimum trading increment as an effort to "level the competitive playing field" between exchanges and off-exchange market centers.[66] But, as noted, exchanges are already able to facilitate pricing at sub-penny levels. In addition, determining whether or not different markets are subject to "fair competition" and "equal regulation" as mandated by the Exchange Act requires a holistic assessment of the regulatory advantages and disadvantages imposed on each market. Efforts to "level" one isolated aspect of the regulatory scheme, while ignoring *other* imbalances, will result in an overall competitive balance tilted decisively in one direction. Here, a comprehensive analysis demonstrates that exchanges enjoy a number of competitive advantages unavailable to off-exchange market centers – largely due to exchanges' status as self-regulatory organizations.

First, exchanges are free from a number of regulatory requirements applicable to off-exchange market centers, such as the duty of best execution. That difference is particularly salient here, because the Commission's Best Execution proposal would impose new, and potentially insurmountable, burdens on off-exchange market centers at the same time as the Commission adjusts the minimum trading increment to benefit exchanges.[67]

Second, as self-regulatory organizations, exchanges enjoy judicially-created absolute immunity from private damages suits under a wide variety of circumstances.[68] Courts have held

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[63] Proposal at 80279.

[64] 15 U.S.C. § 78k-1(a)(1)(C)(ii), (c)(1)(F).

[65] *Bus. Roundtable v. SEC*, 905 F.2d 406, 416 (D.C. Cir. 1990).

[66] Proposal at 80274.

[67] "Regulation Best Execution," 88 FR 5440 (Jan. 27, 2023). In fact, the Best Execution proposal's clear objective to punish wholesale broker-dealers irrespective of the negative impacts for retail investors makes one wonder why the Commission did not simply prohibit the trading of retail orders by wholesale broker-dealers.

[68] *See*, *e.g.*, *Standard Inv. Chartered, Inc. v. NASD, Inc.*, 637 F.3d 112, 115–16 (2d Cir. 2011) (per curiam).

that self-regulatory organizations and their officers "are entitled to absolute immunity when they are, in effect, 'acting under the aegis' of their regulatory duties."[69] And while the doctrine of absolute immunity is premised on the exchange's performance of regulatory functions, exchanges have claimed immunity from liability even in connection with activities that are primarily commercial in substance.[70] Off-exchange market centers, by contrast, are subject to private liability for their actions.

Third, to the extent exchanges' activities are not protected by absolute immunity, they are frequently insulated by their own rules, which strictly limit exchanges' liability to their members.[71] Those rules are given legal effect through the Commission's approval process and through the statutory obligation that exchanges comply with their own rules.[72] Unlike absolute immunity, rule-based liability limitations stretch beyond exchanges' regulatory functions and cover purely commercial activity of the same kind engaged in by off-exchange market centers. By contrast, if off-exchange market centers want to enjoy limitations on liability for their commercial activities, they must negotiate with their customers to do so.

Fourth, as self-regulatory organizations, exchanges have an inherent competitive advantage in their ability to design and implement market structure initiatives. For example, in Rule 613, the Commission delegated to self-regulatory organizations the authority to develop a national market system plan to create, implement, and maintain a comprehensive consolidated audit trail that would allow regulators to track activity throughout U.S. markets in national market system securities.[73] The Commission ultimately approved the consolidated audit trail plan that was developed by the self-regulatory organizations.[74] With respect to this critical regulation affecting the environment in which both exchanges and off-exchange market centers compete for business, exchanges' status as self-regulatory organizations allowed them to shape the legal terrain in ways that off-exchange market centers could not.

In sum, when assessed holistically, exchanges enjoy numerous competitive advantages compared to off-exchange market centers. By adjusting one perceived aspect of that competitive balance – the minimum trading increment – while leaving all others constant (or adjusted to the material detriment of off-exchange market centers), the Commission inappropriately attempts to give preferential treatment to exchanges with no credible market or economic analysis to justify

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[69] *DL Cap. Grp., LLC v. Nasdaq Stock Market, Inc.*, 409 F.3d 93, 97 (2d Cir. 2005).

[70] *See*, *e.g.*, Exchange Act Release No. 67507 (July 26, 2012) (Nasdaq asserting that Facebook IPO malfunctions and consequent member losses resulted from its exercise of regulatory authority).

[71] *See*, *e.g.*, NASDAQ Equity 2 § 17(b)(2) (limiting liability to $3 million per month in aggregate or available insurance); NYSE Rule 18(c)(i) (limiting liability to $500,000 per month in aggregate).

[72] *See* 15 U.S.C. § 78s(b), (g)(1).

[73] "Consolidated Audit Trail," 77 FR 45722 (Aug. 1, 2012).

[74] "Joint Industry Plan; Order Approving the National Market System Plan Governing the Consolidated Audit Trail," 81 FR 84696 (Nov. 23, 2016).

such action.[75] Creating that competitive imbalance is inconsistent with the Commission's obligations under the Exchange Act to assure "fair competition" and "equal regulation" among markets.[76]

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[75] As noted above, the Proposal does not specifically address whether exchange retail programs would be permitted to continue in their current form, notwithstanding the proposed minimum trading increment. If that were the case, the Proposal even more dramatically preferences exchanges, as trading in 1/10 of a cent increments would be permitted *solely on exchange* for many symbols.

[76] 15 U.S.C. § 78k-1(a)(1)(C)(ii), (c)(1)(F).

III. The Proposed Access Fee Changes Are a Poorly Considered, Risky Experiment

In addition to reducing the minimum quoting increment for the vast majority of stocks, the Proposal makes dramatic changes to exchange access fee and rebate levels. In doing so, the Commission appears singularly focused on minimizing the overall commercial impact on exchanges. This improper approach results in a new access fee cap that now accounts for 50% of the minimum quoting increment for most traded volume, which risks discouraging strategies that rely upon accessing displayed liquidity. As detailed below, the Commission also fails to adequately consider the impact of reduced access fees and rebates on market liquidity and competition.

Notably, less than five years ago, the Commission admitted that it "lacks the data necessary to meaningfully analyze the impact that exchange transaction fee-and-rebate pricing models have on order routing behavior, market and execution quality, and our market structure generally."[77] Thus, the Commission proposed a pilot to study these effects. However, the U.S. Court of Appeals for the District of Columbia concluded that the Commission exceeded its statutory authority in proposing "a rule that imposes significant, costly, and disparate regulatory requirements on affected parties merely to allow the Commission to collect data to determine whether there might be a problem worthy of regulation" and vacated the pilot.[78] Therefore, the Commission has no better sense now than it did five years ago of the impacts likely to result from the significant fee and rebate changes contemplated by the Proposal. This subjects the world's preeminent equities market to a risky, ill-conceived, and poorly designed experiment.

A. The Proposal Improperly Focuses on Minimizing the Commercial Impact on Exchanges

Exchange access fees and rebates have long been debated by market participants. The current access fee cap establishes a ratio of 30% between (i) the maximum fee that an exchange can charge for accessing a protected quotation (3/10 of a cent) and (ii) the minimum quoting increment (one cent). Some have argued that the Commission should reduce this ratio in light of advancements in technology and market efficiency.[79] Others have argued that, to the extent the Commission reduces the minimum quoting increment for certain stocks, the 30% ratio should be maintained and access fees should be reduced in a proportionate manner.[80] We are not aware of anyone arguing that the 30% ratio should be *increased*. And yet, that is exactly what this Proposal would do. Specifically, the new access fee cap would be set at (a) 1/20 of a cent for symbols with the newly proposed 1/10 of a cent minimum quoting increment, and (b) 1/10 of a cent for symbols with the newly proposed 2/10 of a cent minimum quoting increment. In each case, the access fee

[77] "Transaction Fee Pilot for NMS Stocks," 84 FR 5202 (Feb. 20, 2019) at 5203, available at: https://www.sec.gov/rules/final/2018/34-84875.pdf.

[78] New York Stock Exchange LLC v. Securities and Exchange Commission, No. 19-1042 (D.C. Cir. 2020) at page 6, available at: https://www.cadc.uscourts.gov/internet/opinions.nsf/BE5AD5AD3C0064408525858900537163/$file/19-1042-1847356.pdf.

[79] *See, e.g.,* https://www.sifma.org/wp-content/uploads/2017/12/SIFMA-Letter-to-SEC-on-Near-Term-Priorities.pdf.

[80] *See, e.g.,* https://memx.com/wp-content/uploads/MEMX-Market-Structure-Report-Tick-Constrained-Securities.pdf.

would now account for a breathtaking 50% of the minimum quoting increment for nearly 65% of total share volume according to the Commission.[81]

Given that concerns relating to the impact of exchange fees and rebates on order routing decisions largely relate to the proportion that these fees and rebates account for relative to the quoted spread, the Commission is completely mistaken in suggesting that the proposed nominal reduction in fees and rebates would reduce "any distortionary effects of exchange rebates on order routing."[82] In fact, the opposite is true. Increasing exchange access fees to half of the quoted spread may also discourage strategies that rely upon accessing displayed liquidity. None of these potential impacts are considered in the Proposal.

The Commission's sole justification for increasing the ratio of exchange fees to the minimum quoting increment from 30% to 50% for many symbols is to "minimize[e] the potential impact of reduced fees and rebates on trading centers' business models."[83] Specifically, the Commission states it "is not reducing them proportionally so as to not unduly impair current agency market business models."[84] As a result, the Proposal explicitly prioritizes exchange revenue over all other considerations, including the impact on market participant order routing decisions and overall market liquidity, efficiency, and competition. This is clearly inconsistent with the Exchange Act. It also ignores the reality that the cost per share incurred by exchanges should have fallen since the introduction of Regulation NMS.

When the Commission adopts a rule imposing new standards for the national market system, the Exchange Act requires it to demonstrate that the rule is "necessary or appropriate in the public interest" and for the "protection of investors."[85] The Commission has accordingly recognized that, in the exchange fee context, it "must enforce [its] rules and the federal securities laws with the goal of protecting investors and the public interest."[86]

The Commission's prioritization of exchanges' profits over investors' interests fails to satisfy that standard. The Commission has not even purported to find that "preserv[ing] the agency market business model" is necessary or appropriate in the public interest, for the protection of investors,

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[81] Proposal at 80316. We note the Commission does not clearly acknowledge this in the Proposal, as the included examples do not include the 1/10 or 2/10 of a cent categories. Proposal at 80328.

[82] Proposal at 80303.

[83] Proposal at 80289. Indeed, the Commission appears willing to protect specific exchanges, even those with uncompetitive business models, stating that it decided not to adopt a lower uniform access fee cap because "it would severely constrain exchanges like IEX that choose to fund themselves primarily through access fees. IEX has an estimated 6 mil net capture, and reducing the access fee cap to 3 mils would cut by around half IEX's net revenue from transactions." Proposal at 80349.

[84] Proposal at 80292. See also Proposal at 80291 ("If the Commission adopted a flat $0.0005 access fee cap regardless of the minimum pricing increment, it would potentially impair certain agency market business models because such a fee level would not allow certain markets to maintain their current net capture rates.").

[85] 15 U.S.C. § 78c(f); *see also id.* § 78k-1(a)(2) (Commission must regulate the national market system with "due regard for the public interest, the protection of investors, and the maintenance of fair and orderly markets").

[86] Transaction Fee Pilot for NMS Stocks, 84 Fed. Reg. 5202, 5207 n.59 (Feb. 20, 2019)

and for the maintenance of fair and orderly markets.[87] That failure alone is enough to sink the new access fees under the Exchange Act.[88] And even if the Commission had made such a finding, it would be unsubstantiated. The Commission offers no explanation or analysis of how increasing the ratio of exchange fees to minimum quoting increments will protect investors and the public interest. At a minimum, the Commission must identify the additional benefits for investors that could be achieved by maintaining the current ratio of exchange fees to minimum quoting increments and explain how it is "necessary or appropriate in the public interest" to deprive investors of those benefits in order to protect exchanges' business models.[89] The Commission's failure to engage in that analysis would render the new access fee cap arbitrary and capricious in violation of Section 25(b)(4) of the Exchange Act.[90]

B. Important Questions Are Inadequately Considered

While inappropriately focusing on protecting exchange revenues, the Proposal fails to adequately consider many important issues, including:

- **The impact on liquidity provision, including the cumulative impact of significantly changing both access fees/rebates and the minimum quoting increment**. The Commission acknowledges that an exchange rebate "effectively subsidizes the prices of displayed liquidity by allowing a maker to post a more aggressive price than it may have in absence of a rebate."[91] However, the Commission inadequately assesses the potential impact on market liquidity of significantly lowering rebates, particularly in light of the extremely small minimum quoting increments that are proposed, which separately can discourage liquidity provision (as detailed in Section I above).

- **The impact on exchange competition**. The current regulatory framework has fostered competition among exchanges, leading to innovation and improved conditions for all investors. One important way for exchanges to compete with each other is through differentiated fee models. Exchanges have raised concerns that they would be "forced to pursue more speed bumps or other structural liquidity incentives to compensate for the lack of rebates."[92] These potential impacts are not considered in the Proposal. Of note, with far finer quoting increments, the impact of "speed bumps" will be far more deleterious to the functioning of the U.S. equities market.

- **Whether the access fee cap should be more broadly applied**. Under Regulation NMS, a broker-dealer must trade against protected quotations before trading at other price levels.

[87] Proposal at 80290.

[88] *See NYSE LLC v. SEC*, 962 F.3d 541, 558 (D.C. Cir. 2020).

[89] 15 U.S.C. § 78c(f).

[90] *Id.* §§ 78c(f), 78y(b)(4).

[91] Proposal at 80288.

[92] "Optimizing Markets for Today and Tomorrow," Nasdaq, available at: https://www.nasdaq.com/docs/optimizing-markets-for-today-and-tomorrow.

As such, access fees must be regulated by the Commission given the monopoly power an exchange has with respect to its protected quotation.

However, in light of the diverse fee models and trading protocols implemented by exchanges, and the importance of being able to access liquidity that is not part of an exchange's protected quotation,[93] the Commission should consider whether investors' interests are best served by applying the access fee cap more broadly than just to protected quotations. This is particularly relevant since the Commission has acknowledged that exchange access fees and rebates do not appear to be subject to free market competitive forces, concluding that "[t]he Commission does not believe that exchanges will lower access fees or their associated rebates absent the proposed regulatory action to lower the access fee cap" as otherwise "a unilateral reduction in rebates would likely cause market participants to route their competitive liquidity-providing orders to another exchange."[94] Therefore, we recommend applying the access fee cap to the full depth-of-book.

- **Whether to require pre-trade fee and rebate transparency**. The Proposal requires that all exchange fees, rebates and other forms of remuneration be determinable at the time of execution in order to provide "certainty as to the net fee and rebate price applicable at a given exchange at the time that an order is routed to that exchange"[95] and "help broker-dealers make better order routing decisions."[96] However, in order to achieve this stated regulatory objective, fees and rebates would have to be known *prior to* the time of execution (instead of at the point of execution, where the fee could vary based on the type of order being accessed).

In light of the important questions above, it is readily apparent that the Commission must more thoroughly consider the potential implications of dramatically changing fees and rebates in the manner proposed. The Commission's failure to consider and deliberate on the aforementioned obvious issues arising from its Proposal falls short of its obligations under the Exchange Act. Furthermore, our equities markets are simply too important to subject to this type of experiment.

[93] As noted in Section I above, significantly reducing the minimum quoting increment further increases the importance of accessing liquidity that is not part of an exchange's protected quotation, as liquidity is fragmented across more price levels.

[94] Proposal at 80305.

[95] Proposal at 80329.

[96] Proposal at 80293.

IV. Implementing the Market Data Infrastructure Rule Should be Prioritized

In December 2020, the Commission adopted the Market Data Infrastructure ("MDI") rule, which was designed to update the system for collecting, consolidating, and disseminating information regarding U.S. stocks. This rule contained a number of elements, including (a) revising the definition of a round-lot to be tiered based on the price of a stock, thereby more closely tracking the total value of an order compared to the current definition of 100 shares, (b) requiring the public dissemination of certain information relating to odd-lots (i.e. orders smaller than a round-lot), and (c) introducing a decentralized consolidation model where multiple consolidators could compete to disseminate information. However, over two years later, this rule has yet to be implemented and there is no clear timeline for doing so.

The Proposal would accelerate the implementation of certain aspects of this rule, particularly the revised round-lot definition and the requirement to disseminate information regarding certain odd-lot quotes. While we have supported certain core elements of this rule[97] and would like to see them implemented, we urge caution regarding the approach contained in this Proposal for several reasons.

First, by narrowly focusing on implementing only certain aspects of the MDI rule, the likelihood of implementing the rest of the rule may significantly decrease. This means that important issues regarding governance and control over the dissemination of market data would be left unaddressed.

Second, there are many overlaps between the MDI rule and this Proposal. For example, the Commission acknowledges that the changes to the round-lot definition alone will likely result in several material impacts, including with respect to quoted spreads and depth at the NBBO, and could increase overall levels of on-exchange trading.[98] In addition, disseminating information regarding certain odd-lot quotes is expected to significantly increase the amount of messaging data.[99] All of these impacts mirror (and therefore amplify) those expected to result from reducing the minimum quoting increment.

Third, the Proposal would introduce a new requirement to publicly disseminate the best top-of-book odd-lot quotes across all exchanges (an "odd-lot NBBO"). The Commission specifically elected not to include this requirement in the MDI rule.[100] Calculating and publishing an odd-lot NBBO risks creating significant investor confusion due to the appearance that a new benchmark is being established even though odd-lots are treated differently than round-lots under Commission regulations. Rather than taking steps to prevent unnecessary investor confusion, the Commission encourages it by suggesting that the odd-lot NBBO is a "standard benchmark" that could be used

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[97] Citadel Securities comment letter to the Market Data Infrastructure Proposal (May 26, 2020), available at: https://www.sec.gov/comments/s7-03-20/s70320-7235178-217088.pdf.

[98] Proposal at 80307, FN 471.

[99] Proposal at 80301, FN 413.

[100] 85 FR 16726 (March 24, 2020) at 16741, available at: https://www.govinfo.gov/content/pkg/FR-2020-03-24/pdf/2020-03760.pdf.

by investors "to measure the amount of price improvement they receive for the execution of their orders."[101]

However, the odd-lot NBBO is not a standard benchmark, since the size associated with these quotes will vary greatly as opposed to the actual NBBO, which always represents a round-lot.[102] As a result, to accurately compute metrics, such as the amount of price improvement, the odd-lot NBBO would have to be adjusted to account for size. For example, there is little value in attempting to measure the execution quality of a 500-share order against an odd-lot price for 10 shares. The Commission acknowledges the importance of accounting for size in execution quality statistics in its Rule 605 proposal,[103] but does not consider that issue here. That omission is striking, and the odd-lot NBBO concept should be removed. More generally, the Commission's failure to carefully analyze the costs and benefits of proposing a new "NBBO" that may be used as a flawed benchmark renders this aspect of the Proposal arbitrary and capricious in violation of Section 25(b)(4) of the Exchange Act.[104]

[101] Proposal at 80270 and 80303.

[102] In addition, any concerns about the level of odd-lot quoting inside the NBBO for high-priced stocks will be addressed by implementing the new round-lot definition.

[103] "Disclosure of Order Execution Information," 88 FR 3786 (Jan. 20, 2023) at 3817, available at: https://www.govinfo.gov/content/pkg/FR-2023-01-20/pdf/2022-27614.pdf.

[104] 15 U.S.C. §§ 78c(f), 78y(b)(4).

V. The Commission Failed to Consider the Impact of the Other Proposals Issued Simultaneously

In addition to the current Proposal, the Commission simultaneously issued three other proposals that address U.S. equity market structure. These proposals significantly overlap with the Proposal, and materially impact the economic analysis contained therein as detailed below. However, the Commission entirely fails to consider the impact of these other proposals, and instead repeatedly "encourages commenters to review [the other proposals] to determine whether it might affect their comments on this proposing release."[105] This results in a clearly insufficient economic analysis, as well as a conflicting and confusing bundle of proposals that fail to give the public notice of the actual, ultimate regulatory requirements the Commission is proposing, and that make it impossible for the public to fully, meaningfully comment. With the Commission's ultimate proposal so unclear, the public cannot reliably discern upon what it is commenting. For this and other reasons, none of these four proposals can be properly finalized without re-proposal and full harmonization with any other proposed Commission rule on equity market structure.

A. Order Competition

The Order Competition proposal appears designed to limit the internalization of retail transactions by requiring many retail equities transactions to be routed to an auction mechanism on an exchange, mimicking the stated rationale in this Proposal for setting a minimum trading increment that is equal to the minimum quoting increment. The Commission does not explain why it is necessary to put forward multiple proposals designed to achieve the same outcome.

In addition, the Order Competition proposal acknowledges the benefits of segmenting retail order flow and allowing retail investors to trade at better prices than those publicly quoted on exchange. As such, the Order Competition proposal permits all retail orders to trade at 1/10 of a cent increments in these new exchange auctions, regardless of the minimum quoting increment. This appears directly contrary to the Commission's stated policy in this Proposal, which includes setting a minimum trading increment that (i) applies to all market centers equally, and (ii) is the same as the minimum quoting increment. Instead, if both proposals were finalized, it would appear that trading in 1/10 of a cent increments would be permitted *solely on exchange* for many symbols. This is but one example of the contradictions and inconsistencies among the four proposals that have left the public without proper notice of the new regime the Commission proposes, and without the ability to fully and meaningfully comment on any of the four proposals.

More generally, both this Proposal and the Order Competition proposal will have wide-ranging effects on market quality, including with respect to quoted spreads, quoted size, market depth, order routing, and exchange market share. These effects would be amplified across the proposals, and therefore the Commission must consider the cumulative impact if both proposals were to be finalized. Likewise, the Commission must re-assess the "baseline" against which this proposal is assessed so that the baseline takes account of related changes that would be effectuated by the three other proposals; those related changes would dramatically alter any benefits that this Proposal

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[105] *See, e.g.,* Proposal at 80302, FN 425.

might achieve. By the same token, the changes proposed *here* must be considered in the "baseline" against which the three *other* proposals are measured.[106]

B. Regulation Best Execution

The Best Execution proposal appears designed to limit the internalization of retail transactions by deeming virtually all retail equities transactions to be "conflicted transactions" that are subject to new vague, costly, and impractical requirements. Limiting wholesale broker-dealer internalization is also the stated rationale in this Proposal for restricting the prices at which trading can occur through establishing a new minimum trading increment. The Commission does not explain why it is necessary to put forward multiple proposals designed to achieve the same outcome, or more fundamentally, why potentially costing retail investors billions of dollars is an appropriate policy objective.

Separately, establishing a regulatory framework that constrains the ability of wholesale broker-dealers to offer better prices to retail investors appears directly inconsistent with the Best Execution proposal, which is purportedly focused on obtaining the most favorable outcome for a customer order.

C. Disclosure of Order Execution Information (Rule 605)

As noted, this Proposal will have wide-ranging effects on market quality, including with respect to quoted spreads, quoted size, market depth, order routing, and exchange market share. In order to understand these effects, it will be important to compare execution quality statistics reported by market centers pursuant to Rule 605. However, in the Rule 605 proposal, the Commission is substantially revamping how these Rule 605 statistics are reported. Therefore, if both proposals were to be finalized, it appears that market participants and regulators would be unable to accurately assess the true impact of the market structure changes contained in this Proposal, precluding an "apples-to-apples" before-and-after comparison.

[106] For example, all of the data the Commission uses to attempt to justify the Order Competition proposal is based on a market structure with a one cent minimum quoting increment and no minimum trading increment. In this Proposal, the Commission states that the proposed changes to the minimum quoting increment and the imposition of a minimum trading increment may have wide-ranging effects, including with respect to order routing and exchange market share. As such, the data used by the Commission in the Order Competition proposal is rendered largely irrelevant.

VI. The Commission Must Adequately Consider Reasonable, Less Burdensome Alternatives

A. Minimum Quoting Increment

As detailed in Section I above, setting a minimum quoting increment involves a careful balance between quoted spread and quoted depth. We recommend the Commission focus on establishing a framework that enables it to proceed in a deliberate manner, evaluate the impact of any implemented changes, and reverse changes that cause liquidity conditions to worsen.

Consistent with these principles, we recommend reducing the minimum quoting increment to 1/2 of a cent for clearly tick-constrained symbols only.[107] As detailed herein, "tick-constrained" should take into account both quoted spread and available liquidity. Therefore, we define "tick-constrained" to mean a symbol that has a(n):[108]

- Time Weighted Quoted Spread of less than or equal to 1.1 cents (focuses on symbols that may be artificially constrained by the minimum quoting increment);
- Average Quoted Size at the NBBO / Average Daily Volume greater than 0.02 (focuses on symbols that have sufficient liquidity at the NBBO relative to overall trading volume); and
- Average Daily Volume of greater than $10 million (focuses on symbols that have sufficient overall trading volume to justify a change to the minimum quoting increment).

Our proposed framework identifies 70 symbols as tick-constrained. By providing a more thoughtful and data-driven framework for determining what should be considered "tick-constrained," and reducing the minimum quoting increment to 1/2 of a cent, our proposal is much more consistent with the prior proposals put forward by the exchanges[109] and strikes an appropriate balance between quoted spread and quoted depth that seeks to avoid the many harms of too small a minimum quoting increment detailed in Section I above.

We note that the Commission offered two criticisms of this type of measured approach in the Proposal. *First*, the Commission argues that certain tick-constrained symbols "could continue to be tick-constrained if the minimum pricing increment for such stocks were only reduced to

[107] We note that we have recommended reducing the minimum quoting increment to1/2 of a cent for clearly tick-constrained symbols for nearly 9 years, but have thus far been rebuffed by the Commission. *See, e.g.,* Letter from Citadel (July 21, 2014), available at: https://www.sec.gov/comments/equity-market-structure-2013/equitymarketstructure2013-7.pdf.

[108] Our analysis uses SIP and historical data from January to December 2022.

[109] *See supra* notes 32-35.

$0.005."[110] While this cannot be completely ruled out, the Commission does not have any data to support this assertion. When considering both the quoted spread and available liquidity (per the approach above), it appears exceedingly unlikely that a significant number of symbols would qualify for a further reduction to the minimum quoting increment. Nonetheless, the Commission could establish a process to regularly review the framework for minimum quoting increments in order to address this concern.

Second, the Commission argues that this approach could leave near-tick-constrained symbols with "a spread that is artificially wide."[111] This argument again ignores the balance between quoted spread and quoted depth that is required when setting the minimum quoting increment. More generally, as detailed in Section I above, the Commission provides no justification for narrowing the minimum quoting increment for symbols that are not tick-constrained. Instead, the Commission should focus on symbols that may be artificially constrained by the minimum quoting increment.

B. Minimum Trading Increment

As detailed in Sections I and II above, the Commission should consider quoting and trading increments separately, thereby allowing sensible minimum quoting increments to be established. To the extent the Commission persists in its view that (contrary to the Exchange Act) it has the authority to set a minimum market-wide trading increment, and that it is necessary to do so, we recommend that this be set at 1/10 of a cent for all symbols with prices equal to or greater than $1. This approach would formalize the level playing field that already exists for segmented retail order flow, including the retail liquidity programs on exchanges that allow trading to occur at 1/10 of a cent increments.

In no event should the Commission allow market centers to accept or rank orders, quotations, or indications of interest in pricing increments smaller than the minimum quoting increment. The Commission has consistently applied equivalent requirements to accepting, ranking, and displaying.[112] Modifying this approach to allow market centers to accept or rank at 1/10 of a cent increments would have a number of significant consequences, including preferencing non-displayed liquidity over displayed liquidity (as, in practice, there would be a different minimum quoting increment applicable to non-displayed liquidity), and giving off-exchange market centers new capabilities that could increase market fragmentation. In any case, we note that pursuing this approach should require re-proposal, as it is not identified in the Proposal as an alternative being considered by the Commission.[113]

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[110] Proposal at 80281.

[111] Proposal at 80343.

[112] *See, e.g.,* 70 FR 37496 (June 29, 2005) at 37556 ("The Commission sees no purpose that would be served by allowing the broker-dealer to accept this sub-penny order, since Rule 612 would in any case prohibit the full order from being displayed or considered for ranking or execution purposes.").

[113] The Commission identifies a 1/10 of a cent trading increment as an alternative, but does not consider allowing market centers to accept or rank in these increments. Proposal at 80339.

C. Access Fees and Rebates

We recommend that the Commission maintain (or modestly reduce) the current 30% ratio between (i) the maximum fee that an exchange can charge for accessing a protected quotation and (ii) the minimum quoting increment. This means any reduction in access fees would be applied to those stocks where the minimum quoting increment is reduced (and a proportionate reduction means that the access fee cap would be 3/20 of a cent if the minimum quoting increment is reduced to 1/2 of a cent).

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We thank the Commission for considering our comments on the Proposal.

Please feel free to call the undersigned with any questions regarding these comments.

Respectfully,

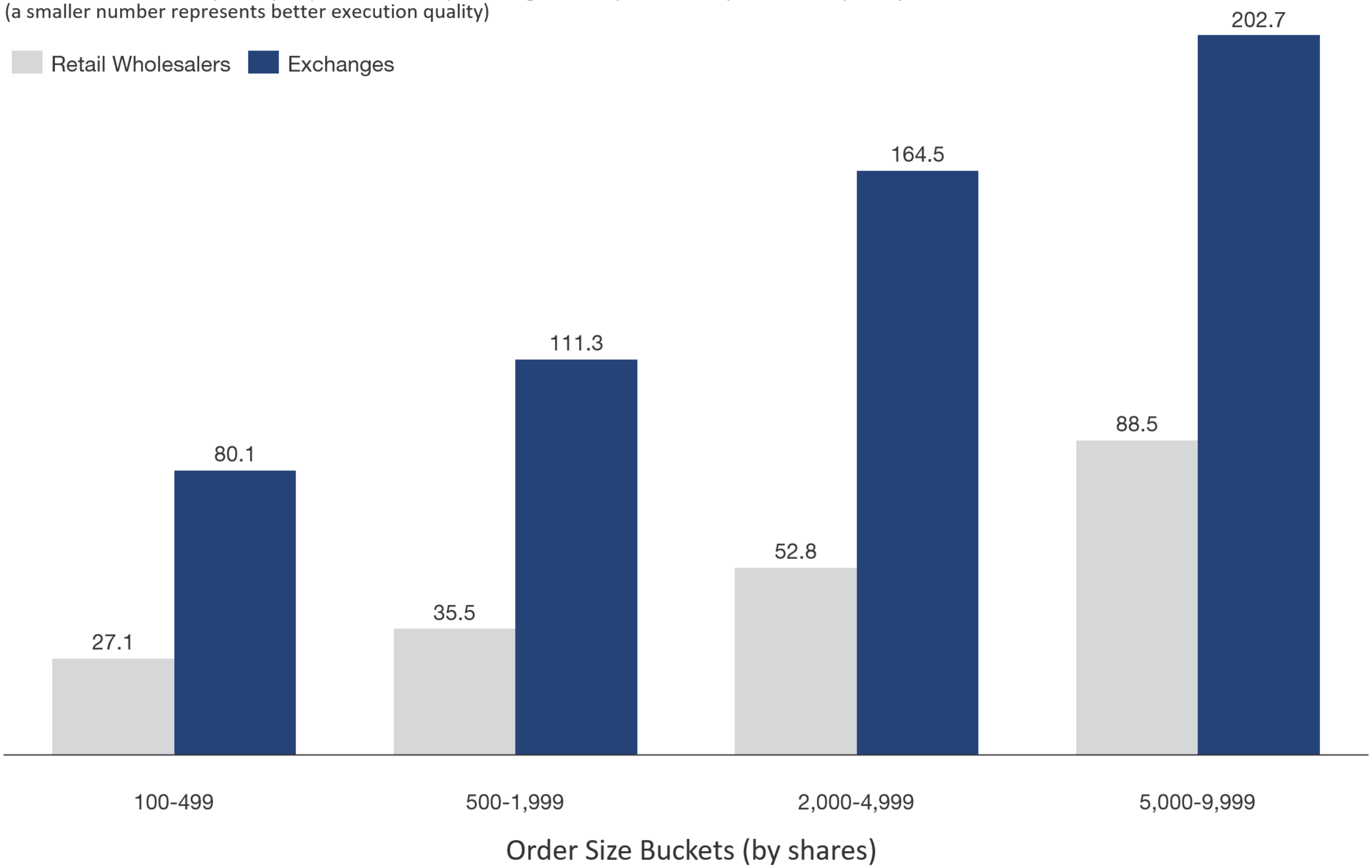
/s/ Stephen John Berger

Managing Director

Global Head of Government & Regulatory Policy

Effective/Quoted Spread (Market Orders)

Effective over Quoted Spread (E/Q) measures the percentage of the quoted half-spread that is paid by an investor (a smaller number represents better execution quality)



Data is from 2022 SEC Rule 605 filings (Exchanges include NYSE, NYSE ARCA, NYSE American, NASDAQ, NASDAQ BX, NASDAQ PSX, EDGX, EDGA, BZX, BYX, MEMX, IEX)