March 30, 2023

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

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

Dear Ms. Countryman:

Nasdaq, Inc. ("Nasdaq") writes to comment on the four equity market structure reform proposals that the Securities and Exchange Commission (the "SEC" or the "Commission") published on December 14, 2022.[1]

I. EXECUTIVE SUMMARY

On balance, U.S. equities markets today work extraordinarily well. They do so, in large part, because of their adaptability to changes – changes to technology, to the nature of market participants, and to market conditions. Market structure regulation also must keep pace with these changes. In this regard, the SEC's Proposals raise many topics worthy of consideration and debate.

Nasdaq supports market modernization, provided that it accounts for the mature, interconnected, and complex nature of the market ecosystem. Reform should support a strong and robust National Best Bid and Offer ("NBBO") as well as the competitiveness of transparent, exchanges whose displayed quotes form the NBBO. Whenever possible, we recommend that equity market structure reforms be incremental and pragmatic and avoid undue risks, costs, and burdens. Reforms are most likely to succeed if they are pursued through a process that is

[1] See Securities Exchange Act Release No. 34-96495 (December 14, 2022), 88 FR 128 (January 3, 2023) (the "Order Competition Proposal"); Securities Exchange Act Release No. 34-96494 (December 14, 2022), 87 FR 80266 (December 29, 2022) (the "NMS Proposal"); Securities Exchange Act Release No. 34-96496 (December 14, 2022), 88 FR 5440 (January 27, 2023) (the "Best Execution Proposal" or "Best Ex Proposal"); Securities Exchange Act Release No. 34-96493 (December 14, 2022), 88 FR 3786 (January 20, 2023) (the "Rule 605 Proposal") (collectively, the "Proposals").

methodical, backed by data, and which reflects as much outreach and consensus as possible. Most importantly, we believe that reforms should serve the interests of investors by protecting them and improving their outcomes. With these principles in mind, we take the following positions on the Proposals.

Tick Size/Access Fee Cap/Pricing Transparency/MDI Acceleration –

- *Tick Size* – Nasdaq supports adjusting the minimum pricing increment ("tick size") to better reflect the trading dynamics of Regulation National Market System ("Reg. NMS") securities. However, we think that it is important to recalibrate the Commission's specific Proposals for new tick sizes need to avoid harming displayed liquidity and widening spreads. Nasdaq suggests a simpler approach of adding one tick size below one penny – at $0.005 – to help tick-constrained securities trade more naturally. Beyond lower-priced tick-constrained securities, we ask the SEC to also consider a wider minimum tick size of $0.05 for higher-priced and less liquid securities that currently trade with much wider spreads.

- *Tick Harmonization* – We also support the Proposal to harmonize tick sizes across all trading venue types to eliminate the artificial competitive disparity that exists. Because harmonizing quoting and trading increments might reduce opportunities for retail investors to receive price improvement, we support that liquidity that interacts with retail orders may be in increments of 0.001.

- *Access Fee Cap* – Nasdaq supports adjusting the access fee cap to accommodate new tick sizes, but the Proposal goes far beyond what is needed for this purpose. It risks weakening the NBBO by restricting exchanges' ability to offer meaningful rebates to encourage more liquidity and tighter spreads that underpin the NBBO. The Commission's supposition that rebates present harmful conflicts-of-interest to brokers is not supported with evidence, and it ignores the countervailing benefits associated with rebates, which are essential tools for gathering the displayed quotes that form the NBBO. It would be arbitrary and capricious for the Commission to proceed with the Proposal in the absence of evidence that the current fee cap is actually harmful to the market and without meaningfully weighing the costs and benefits of those reductions. As an alternative, we recommend that the SEC adopt a fee cap that is $0.0015 for securities in the $0.005 tick size bucket while maintaining the same $0.0030 cap that exists today for securities in the $0.01 tick bucket. This alternative would cut access fees by half for securities in the $0.005 tick bucket, while preserving room for exchanges to continue offer rebates that are needed to bolster market quality and the NBBO. We ask the SEC to refrain from undertaking any further cap reductions without first pausing to study the impacts of this initial change on spreads, depth, institutional trading costs and ETF pricing efficiency.

- *Transparency of Pricing Information* – Exchange pricing is already highly-transparent, uniquely so among trading venues, and Nasdaq does not believe that additional transparency is necessary. Nonetheless, we do not object in principle to enhancing price transparency of volume-based fees and rebates to facilitate broker-dealers' ability to pass-through fees and rebates to investors. The Commission itself

acknowledges that such pass-throughs would alleviate its concern (however misguided) about rebates creating conflicts for broker-dealers. Accordingly, this Proposal (along with robust best execution procedures) should remove any basis for slashing access fee caps to diminish the use of rebates. Furthermore, if the Commission moves forward with this proposal, the same standards should apply to all market centers.

- *Acceleration of Market Data Infrastructure Rule Provision Relating to Round/Odd-Lots* – Finally, Nasdaq supports the Commission's proposal to accelerate the implementation of pending provisions of its Market Data Infrastructure ("MDI") Rule that would re-define the concept of "round lots" and incorporate odd-lots into the Securities Information Processor ("SIP") feeds. However, the proposed 90 day accelerated timeline is too aggressive and it requires adjustment to account for technical realities. Along with the SIP Operating Committee, we support a more reasonable timeline of at least 12 months for implementation.

Order Competition Proposal – Nasdaq believes that finding ways to bring more retail investors together in a competitive environment is a worthy goal which would benefit retail investors, institutional investors, and the market as a whole. That said, the SEC risks too much by solely focusing on qualified auctions, as there is no silver bullet solution to the problem it identifies. In lieu of imposing a prescriptive and untested solution, we instead recommend that the SEC define a minimum price improvement threshold (e.g., a percentage of the spread) that broker-dealers must meet in order to internalize retail order flow. If a broker-dealer is unable to provide meaningful price improvement on a retail order, then we suggest that it be required to send its order to interact on an exchange or a similar fair access venue. The Commission should not, however, prescribe the manner by which such order interaction occurs. Instead, we recommend that it permit participants to innovate their own solutions (subject to the SEC approval and public comment process) which could, but need not include some form of retail auction, as well as enhanced retail liquidity programs. As to retail liquidity programs, we think that exchanges should have flexibility to operate these programs so that they can deploy competitive solutions, including by having the freedom to accept, rank, and display orders in $0.0010 increments. In any event, we ask the Commission to refrain from taking action on order competition until after it implements its other Proposals. Further, we ask that it then pause to assess whether these Propose suffice to achieve the Commission's objectives for order competition and, if not, determine what additional steps would be prudent.

Disclosure of Order Execution Information ("Rule 605 Reform") – Nasdaq supports the Commission's Proposal to modernize and improve the usability of Rule 605 reports so that they provide broker-dealers and investors with more relevant, comprehensive, and understandable information by which to make best execution determinations and to assess market quality.

Best Execution – We believe it is reasonable for the SEC to adopt its own best execution rule, as doing so will enhance investor protections through Federal administration and enforcement. However, we ask that the new rule do more than merely add a new layer of bureaucracy to the existing best execution regimes of the Financial Industry Regulatory Authority ("FINRA") and the Municipal Securities Rulemaking Board ("MSRB"). We

recommend that it be clear in its standards to avoid setting broker-dealers up for regulation by enforcement. Accordingly, we recommend that the SEC do the following:

- We ask the SEC to clarify how its interpretation and implementation of best execution will be the same as, and how they will differ from, those of FINRA and the MSRB, with a goal of helping broker-dealers to understand how to adjust their historical practices to meet any new SEC standards going forward. Similarly, we ask the SEC to be clear about whether, and to what extent, it intends to incorporate into its rule the existing body of FINRA and MSRB guidance on best execution.

- To prevent undue burdens associated with overlapping best execution regimes, and confusion that may arise where the overlap is imperfect, we recommend that the SEC's new proposed rule supplant the FINRA and MSRB rules.

- We recommend that the Commission provide broker-dealers with opportunities to comply with the new rule before acting to enforce it. In particular, we suggest that the SEC provide a grace period during which it will temporarily refrain from enforcement actions against broker-dealers that demonstrate good-faith and reasonable efforts to comply. We also recommend that the SEC consider adopting a "no-action letter" program to provide guidance to broker-dealers as to whether their prospective behaviors would comply with the rule. Finally, we recommend that the SEC adopt compliance safe harbors that broker-dealers may rely upon when evaluating their policies and procedures. We believe that one such safe harbor should state how broker-dealers can satisfy their best execution duties when routing orders to exchanges that pay rebates.

II. INTRODUCTION

The Commission's review of U.S. equity market structure regulation is an important undertaking. The markets have evolved significantly since the SEC promulgated the last such overhaul of equity market trading rules – Reg. NMS – in 2005.[2] The competitive environment has blossomed from a handful of trading venues to a fiercely competitive mix of 16 exchanges and scores of other market centers, including approximately 32 alternative trading systems, as well as wholesale market makers and single-dealer platforms. Furthermore, the rapid pace of technological innovation has transformed the markets by facilitating faster access, more efficient executions, and new and more useful tools for investing and trading. As a result of such innovations, spreads are tight and trading costs for retail investors are low. Even during periods of unprecedented crisis and market volatility, the markets have remained resilient and reliable.

Although in many ways, today's markets work well and better for investors than they did in 2005, there are always opportunities for improvement. We believe that such improvements should be consistent with the following principles:

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2 See Securities Exchange Act Release No. 34-51808 (June 9, 2005), 70 FR 37496 (June 29, 2005) ("Regulation NMS").

- Avoid unintended consequences – The Commission must recognize that the equity markets are intricate, interconnected and complex, and that radical or rash changes, even to a small element, can have significant unintended consequences.

- Support lit markets and the NBBO – U.S. equity market structure is built atop a foundation of the NBBO and the exchanges that support it. The NBBO is weakening, however, as trading drifts away from exchanges. To strengthen markets, reforms must bolster the NBBO so that it is once again robust and representative. This task, in turn, requires the SEC to enable exchanges to compete on a level playing field to attract the lit quotes that form the NBBO.

- Evolution, not revolution – Whenever possible, we recommend that reforms be incremental and pragmatic rather than drastic and ideological. We ask the SEC to avoid undue risks, costs, and burdens, as well as rigid and prescriptive solutions that stifle innovation. We think that reforms stand the best chance for success if they proceed through a process that is methodical, backed by data, and which reflects as much consensus as possible.

- Serve the interests of investors and issuers – Ultimately, reforms must serve the interests of investors and issuers by protecting them and improving their experiences and outcomes.

In particular, we believe that today's market structure can and should do more to strengthen the NBBO, including by recognizing and supporting the important role that exchanges (and the quotes they display) play in constructing it. In recent years, the ability of exchanges to provide this public good has come under pressure as equity trading has continued to shift away from them. The Commission has correctly observed that this trend toward darkness has been aided by an "unequal playing field when competing for order flow."[3] This is the result of dark platforms enjoying far more flexibility than exchanges, including the ability to trade in sub-penny price increments (and thus capture orders through sub-tick trade prices) and through various types of client segmentation. As one might expect, any time there are similar platforms performing similar functions but with varying degrees of regulation, market activity will naturally gravitate to the platform with less regulation.

Given that Nasdaq has long been a vanguard for prudent market structure reform, including through initiatives such as Revitalize, TotalMarkets, Intelligent Ticks, and most recently, Optimize,[4] Nasdaq welcomes the fact that the SEC's Proposals reflect many concerns

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3 See SEC Chairman Gary Gensler, Prepared Remarks at the Global Exchange and Fintech Conference (June 9, 2021), https://www.sec.gov/news/speech/gensler-global-exchange-fintech-2021-06-09.

4 See Nasdaq, The Promise of Market Reform: Reigniting America's Economic Engine (last updated Feb. 2018),

and, to varying degrees, recommendations that Nasdaq has championed. Notably, the SEC's Proposals echo Nasdaq's calls for tick size reform to help tick-constrained securities trade better, harmonizing tick size across trading venues to help level the competitive playing field, modernizing execution quality reporting metrics, enhancing the duty of best execution, and requiring that price improvement for retail orders be meaningful to justify orders trading away from lit markets, where they would otherwise contribute to transparent price discovery. [5]

Although Nasdaq welcomes the Commission's attention to these issues, we believe that in certain cases, such as access fee caps, tick sizes, and order competition, the specific means that the SEC proposes to achieve its objectives need to be re-calibrated to avoid collateral harm to the markets and to investors. Moreover, efforts by the Commission to reverse the erosion of lit markets will be for naught if such efforts do not also fortify the NBBO. In this regard, we ask the Commission to avoid measures that would weaken the NBBO, such as drastic cuts to the rebate incentives that exchanges use to attract price-forming quotes.

For certain proposals, including qualified auctions, it is incumbent upon the Commission to reflect upon whether it has sufficient data to conclude that its approach is warranted and is the best and/or only way to solve the problems it has identified. More generally, the comment period is an important opportunity for the Commission to gain an understanding of potential, unintended consequences of each rule as well as the combination of multiple rules together, and therefore to make adjustments or pivot if warranted.

As the Commission contemplates its next steps on the Proposals, we recommend that the Commission stagger and carefully sequence their adoption and implementation.

In that regard, the Commission must be careful to consider both the individual and combined effects of its Proposals. In the Open Meeting that launched the Proposals, SEC Staff insisted that each of the four Proposals stands on its own and is designed to be considered separately. However, even a casual observer of equity market structure can see that these

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https://www.nasdaq.com/docs/Nasdaq_Blueprint_to_Revitalize_Capital_Markets_April_2018_tcm5044-43175.pdf ("Revitalize"); Nasdaq, TotalMarkets: A Blueprint for a Better Tomorrow (Apr. 2019), https://www.nasdaq.com/docs/Nasdaq_TotalMarkets_2019_2.pdf ("TotalMarkets"); Nasdaq, Intelligent Ticks: A Blueprint for a Better Tomorrow (Dec. 2019), https://www.nasdaq.com/docs/2019/12/16/Intelligent-Ticks.pdf ("Intelligent Ticks"); Nasdaq, Optimizing Markets for Today and Tomorrow: A Framework for U.S. Equities Market Reform (2022), https://www.nasdaq.com/docs/optimizing-markets-for-today-and-tomorrow ("Optimize").

[5] Nasdaq notes that it continues to support other Optimize recommendations that the Commission did not address, including increasing the transparency of off-exchange trading by attributing trade reports to the trade reporting facilities, eliminating the concepts of round and odd lots, and amending the Securities Information Processor Plans to reallocate revenue sharing to better reward activity that promotes price discovery and strengthens the NBBO. See Optimize, supra, note 4.

Proposals are intertwined. Moreover, if the Commission abandons or modifies one or more elements of its Proposals, then we think it would be wise to consider the individual and collective impacts anew and open an additional public comment period. The Commission must strive to avoid an outcome where the incomplete adoption of the Proposals or a modified version leaves the markets worse off than they are today.

III. TICK SIZE/ACCESS FEE CAP/TIERED PRICING/MDI ACCELERATION

a. Minimum Pricing Increments ("Tick Sizes")

In 2017, Nasdaq observed that the current "one-size-fits-all approach to tick size is suboptimal for many."[6] To promote reform, we proposed an intelligent tick structure in 2019,[7] explaining that "[m]any of the issues afflicting the market today can be traced back to the current tick size regime." As such, Nasdaq welcomes the Commission's efforts to revise minimum pricing increments. However, we are concerned that the Commission's specific Proposal for three sub-penny tick buckets is too complex. As we discuss below, data suggests that the proposed tick buckets are too granular and will provide for too many ticks, which will lead to flickering quotations, increased price instability, less aggregated liquidity, wider spreads, and greater market fragmentation. Simply put, the Proposal may weaken the NBBO.

Nasdaq, along with a diverse cross-section of the industry, believes that these problems are avoidable if the SEC pursues a simpler, more incremental alternative approach to tick size reform – namely, the addition of a single, half-penny tick bucket to accompany the existing one-penny bucket. This alternative approach would address the SEC's concerns with tick constraints, while following the Hippocratic dictum of "first, do no harm." If, after the implementation of the new half-penny tick (in addition to the current penny tick), certain securities continue to be tick constrained, an additional incremental reduction in tick size could be considered, provided it is clear that another tier is warranted.

We also ask the Commission to re-consider addressing the problem of excessively-wide spreads[8] in higher-priced and less liquid securities, if not now, then in the near future. The best solution would be a $0.05 tick at the high end, though others may have different perspectives. We recommend that the Commission work with industry to develop a consensus solution.

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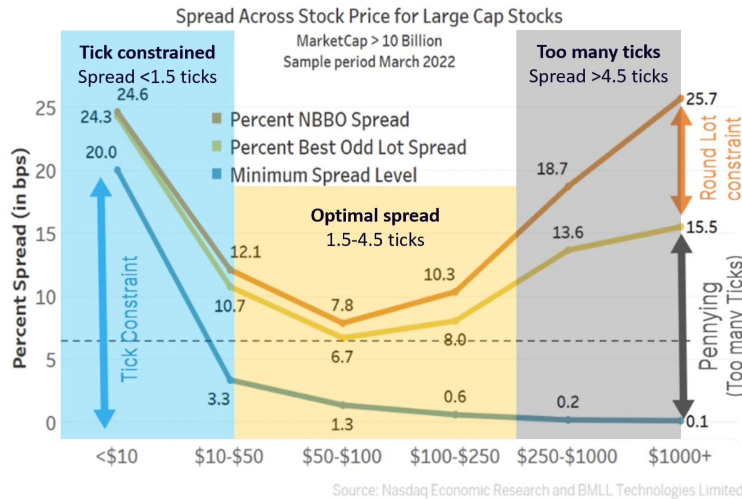
[6] Revitalize, supra, note 4.

[7] Intelligent Ticks, supra, note 4. Nasdaq also advocated for tick reform in its 2019 TotalMarkets Proposal. See TotalMarkets, supra, note 4.

[8] As explained below, we believe that the ideal tick spread is 2-3 ticks, although tradability is still relatively good up to 4.5 ticks. We note that the SEC agrees that 2 tick spreads are not enough for efficient trading. See NMS Proposal, supra, note 1, at 80344 ("… TSP securities that had fewer than two ticks spread prior to the conclusion of the TSP benefited from the reduction in the tick size when the security's tick size reverted from $0.05 to $0.01. Thus, our analysis indicates that fewer than 2 ticks spread is on average too few and that securities would trade better with more ticks intra spread.").

i. The ideal spread is 2-3 ticks.

Research demonstrates that an optimal tick size exists.[9] Analysis shows that spreads form a U-shape, with optimal spreads at the bottom of the U, as shown in the following chart:



The U shape is repeated across all market cap spectrums.[10] Trading is optimal at the center of the U, and impaired at both arms: transactions are more expensive both for securities with prices that are too low (tick-constrained) and for those with prices that are too high (excessively-wide spreads).

We support the SEC's market-driven bucket approach, as securities at all prices see both tick constraints and excessively-wide spreads.[11] The following chart shows that prices for tick-constrained securities (in blue) range from $1 to over $50. Securities with optimal spreads (in yellow) have prices ranging from $1 to $250. Excessively-ticked securities (grey and black) range from $1 to $2,000.

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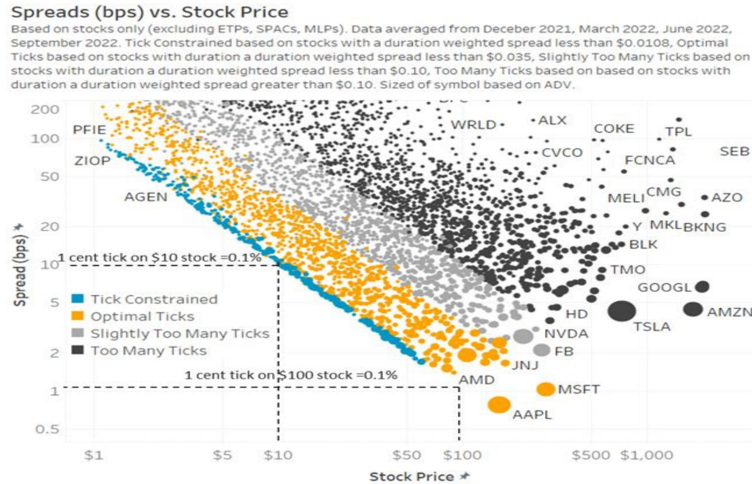
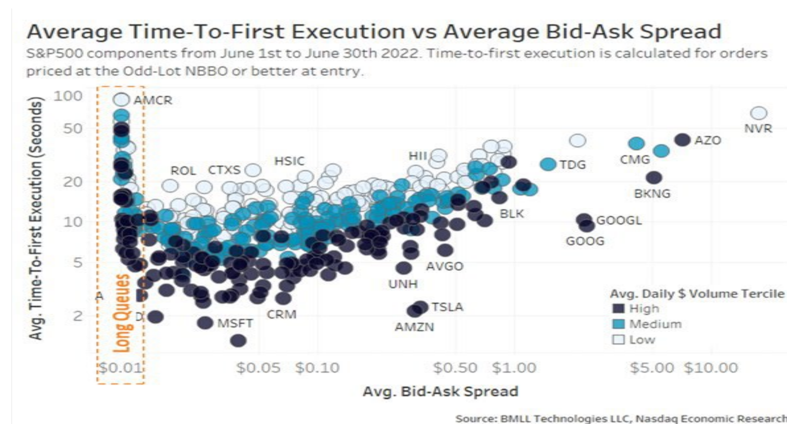
9 Many researchers agree that securities with a 2-3 tick spread trade efficiently. Some researchers have argued that securities with spreads as wide as 4.5 ticks can trade efficiently as well, but we believe that there is not a consensus on this point. See Phil Mackintosh, Research on What Ticks Make Spreads Trade Best, (Mar. 2, 2023), https://www.nasdaq.com/articles/the-tick-spreads-that-help-stocks-trade-best.

10 Phil Mackintosh, Why Intelligent Ticks Make Sense, (Jan. 9, 2020), https://www.nasdaq.com/articles/why-intelligent-ticks-make-sense-2020-01-09. See also Phil Mackintosh, The Data is Already Out There to Design Better Markets, (Feb. 15, 2019), https://www.nasdaq.com/articles/the-data-is-already-out-there-to-design-better-markets-2019-02-15.

11 Mackintosh, Research on What Ticks Make Spreads Trade Best, supra, note 9.



The chart below demonstrates that for tick-constrained securities, the average time to first execution is higher relative to other securities, and queues form.[12] As the bid-ask spread increases, average time to first execution decreases initially, but then rises again for securities with extremely high spreads, which exhibit similar delays in time to first execution as tick-constrained securities.

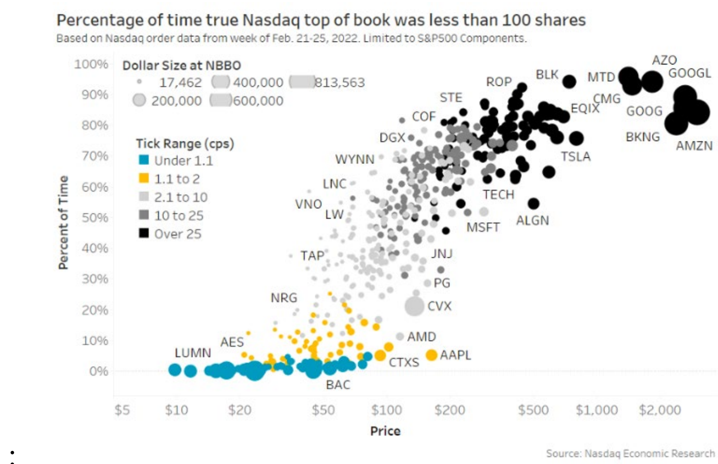


Securities with too many ticks not only have wider spreads, but they also have more odd lots, and more message traffic, leading to a more fragile NBBO.[13] To understand the impact of too-many-tick securities on the NBBO, the chart below compares the percentage of time that an odd lot is at the top of book against the price of the security. Tick-constrained securities almost always have a round lot at the NBBO. As the number of ticks increase, the amount of time where the top of book is an odd lot also increases. For securities with the largest number of ticks (in dark-grey and black), the percentage of time that NBBO is the true best price falls below 50

[12] Phil Mackintosh, The Tick Constrained Stock Problem, (Jan. 20, 2022), https://www.nasdaq.com/articles/the-tick-constrained-stock-problem.

[13] Phil Mackintosh, Why Ticks Matter, (May 19, 2022), https://www.nasdaq.com/articles/why-ticks-matter.

and as low as 5 percent. Clearly, this lack of odd lot information reduces the value of the NBBO.[14]



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The existence of the U-shape, with optimal ticks reducing trading costs, improving liquidity, and reducing issuer cost of capital, is demonstrated in multiple empirical studies.[15]

One study found that all securities achieve their optimal prices when their bid-ask spread is two ticks wide.[16] Stock splits improved liquidity when the bid-ask spread moved toward two ticks, but reduced liquidity otherwise.

Regulators in Europe have found that the best spread is between 1.5 ticks and 2 ticks wide for liquid securities, and between 1.5 and 5 ticks for less liquid securities.[17] Analysts reasoned that, "tick size must be big enough to ensure that there is a relevant cost to overbidding," and "[e]xcessively granular tick sizes in securities have a detrimental effect on market depth as it is almost cost free to overbid and may discourage liquidity providers from posting orders." "If the tick size is too small, the outbidding cost is no longer significant (it costs next to nothing to outbid) and liquidity does not aggregate effectively as there are too many

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[14] Adding odd lots to the SIP, as suggested elsewhere in this proposed rule, does not solve the problem, as odd lots are not included in the NBBO. Over the long run, eliminating round lots altogether, as discussed below, may be a better resolution.

[15] Sida Li & Mao Ye, The Optimal Nominal Price of a Stock: A Tale of Two Discretenesses, (working paper Nov. 3, 3021), (retrieved from SSRN Elsevier database).

[16] Sida Li & Mao Ye, Discrete Price, Discrete Quantity, and the Optimal Price of a Stock, (Mar. 8, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3763516.

[17] AMF ("Autorité de Marchés Financiers"), MIFID II: Impact of the New Tick Size Regime, (Mar. 2018), https://www.amf-france.org/sites/institutionnel/files/contenu_simple/lettre_ou_cahier/risques_tendances/MiFID%20II%20Impact%20of%20the%20New%20Tick%20Size%20Regime.pdf; see also Intelligent Ticks, supra, note 4, at 12.

increments of possible prices. Insertions, modifications and cancellations of orders are therefore more frequent, affecting book legibility and price formation."[18]

An XTX white paper on optimal tick sizes suggested that optimal spreads are between 2 and 4 ticks.[19] The authors explained that tick sizes should be calibrated to allow liquidity to cluster at a price point and require market makers to assume meaningful risk when stepping in front of and improving an existing price. The paper noted that tick sizes that are too small can create flickering pricing that is hard to access and reduce depth on the quote.

Most other countries follow this optimal tick approach by having tick sizes under $0.01 for securities likely to be tick constrained, while increasing tick size for securities more likely to have wider spreads.[20]

ii. The proposed sub-penny tick structure is more complex than needed.

The SEC correctly describes the problem of tick-constrained securities.[21] Such securities are "not able to be priced by market forces" because the current "rule 612 minimum pricing increment of $0.01 may now be too large for certain stocks , which, in turn, results in the pricing of such stocks being artificially constrained."[22] Trading in these securities would be improved "if competitive market forces could establish prices in sub-penny increments, which could reduce quoted spreads,"[23] allowing these securities to "be priced more aggressively within the spread."[24] We agree with this description of trading at the first arm of the U.

Based on that analysis, the SEC proposed to add three additional sub-penny tiers to the current $0.01 tick: $0.001, for an Average Quoted Spread ("AQS") equal to, or less than, $0.008; $0.002, for an AQS greater than $0.008 but less than, or equal to, $0.016; $0.005, for an AQS greater than $0.016 but less than, or equal to, $0.04; and $0.01, for an AQS greater than $0.04.[25] We believe that this Proposal would, in fact, harm investors by exacerbating problems with securities trading with too many ticks. To see the problem, consider the following two charts.

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[18] MIFID II: Impact of the New Tick Size Regime, supra, note 17.

[19] XTX Markets, Tick Sizes and their Effect on the Buy-side, https://www.datocms-assets.com/10954/1555503679-tick-sizes.pdf.

[20] Phil Mackintosh, What Makes Other Countries' Trading Tick?(Oct. 6, 2022), https://www.nasdaq.com/articles/what-makes-other-countries-trading-tick.

[21] NMS Proposal, supra, note 1, at 80274 (explaining that tick constrained securities "regularly experience a time-weighted average quoted spread of 1.1 cents or less, which indicates that these stocks are frequently quoted in the smallest increment permitted under the rule.").

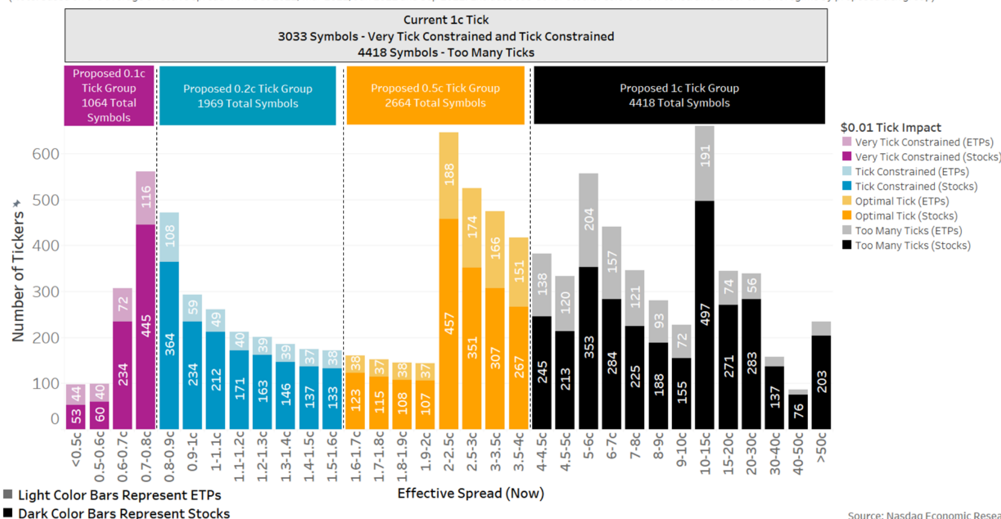
[22] Id. at 80268.

[23] Id.

[24] Id.

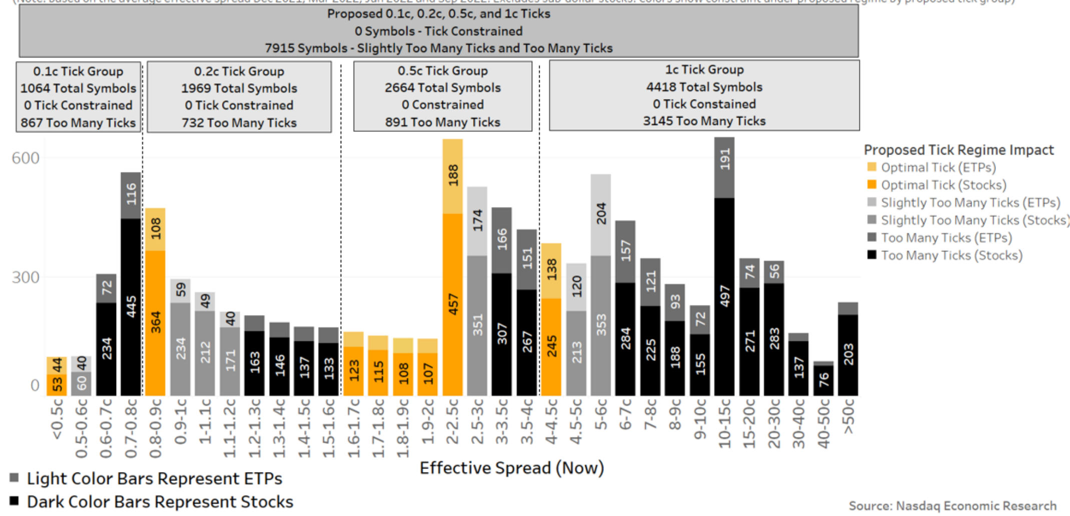
[25] Id. at 80269.

The first chart assigns securities trading at the current $0.01 tick into four categories, using effective (rather than quoted) spreads. These categories align with the cut-offs the SEC chose in its Proposal: (1) very tick-constrained (pink) - over 1,000 stocks with effective spreads of less than $0.008; (2) tick-constrained (blue) - almost 2,000 stocks have an effective spread from just under $0.008 to up to $0.016 which, based on research, could benefit from more ticks; (3) optimal ticks (yellow) - around 2,700 stocks are well-ticked, using the broadest definition of optimal spread ($0.016 – $0.04); and (4) too many ticks (black) - over 4,000 stocks trade more than $0.04 wide, with around 450 trading more than $0.30 wide.



As shown in the second chart, transitioning from the current regulatory environment to the SEC Proposal causes all securities in the tenth of a penny group to have 1-8 tick spreads, while securities in the fifth and half-penny groups will have 4-8 tick spreads, and securities in the one penny group to have 4 or more ticks.[26] Adding three sub-penny ticks levels, the Proposal causes more securities to trade with too many ticks, across all price levels.

[26] For the purposes of this chart, 4 ticks were included in the optimal range. As noted above, there is broad consensus that 2-3 ticks is optimal for trading, but some research states that spreads up to 4.5 ticks would be acceptable (but not optimal) for good tradability.



The dark areas of both charts identify securities with too many ticks. The Proposal aggravates this problem, introducing it to securities not previously affected by excessively-wide spreads – this is seen by the increase in dark areas on the second chart versus the first chart. Overall, the proposal would cause almost all securities to trade at 4-8 tick spreads.

Excessively-wide spreads reduce the incentive for market participants to post bids and offers quickly, resulting in slower price formation. Because liquidity providers face a higher risk of other stepping ahead of them, the order book will become more unstable, and may widen spreads as liquidity providers compensate for the increased risk of missing two-sided trades. Both the NBBO and overall market quality will suffer as liquidity forms in shallow pools at too many price points, rather than aggregating at a smaller number of price points with depth.

Securities having too many ticks also increases the complexity and costs of (institutional investors) executing large orders, resulting in longer fill times and an imbalance between providers and takers of liquidity. What follows is less quote competition, a more dispersed order book, less informative price formation, and wider spreads – all of which repeat in a self-reinforcing cycle. These trading issues also result in an increase in the use of non-displayed quotations, widening displayed spreads. The resulting fragmented order book reduces the quality of the NBBO.[27] All of these developments would harm investors.

iii. A single sub-penny tick is the best approach for now.

[27] See Justin Cox, et al., Increasing the Tick: Examining the Impact of the Tick Size Change on Maker-Taker and Taker-Maker Market Models (2019); Sean Foley, Tom Meling, and Bernt Odegaard, Tick Size Wars: The Market Quality Effects of Pricing Grid Competition (2021).

Nasdaq, along with an emerging consensus of others, believe that adding a single, half-penny tick bucket to the existing $0.01 tick bucket is best approach for reform.[28] We propose that securities fall into this new $0.005 tick bucket only if they are tick-constrained. This solution that would substantially improve market quality by relieving tick constraints for most securities that the SEC targets and avoid the pitfalls of going too granular, too quickly (or at all). After adopting a half-penny tick, and taking time to study its effects, the SEC could then consider whether adoption of an additional tick size is warranted. This is the type of incremental, market-based and pragmatic solution that works best in our complex markets.

iv. The Commission overlooked problems with excessively-wide spreads.

Higher-priced and less-liquid securities currently suffer from the same problem that we urge the Commission to avoid for tick-constrained securities—that tick sizes are too small relative to the prices and spreads for such securities. The Commission overlooks the problem of excessively-wide spreads in higher-priced securities based on a flawed economic analysis.

First, the Commission's own analysis of the Tick Size Pilot ("TSP") does not support the conclusions that it draws in the Proposal. Based on the TSP, the Commission preliminarily concluded that having a 1-10 tick spread for tick constrained securities is beneficial. The TSP increased costs to trade by artificially tick-constraining a number of liquid securities that had a spread under 4.5 cents before the TSP. At the end of the TSP, the SEC removed the tick constraint on those names, and allowed them to return to pre-TSP spreads. From this experiment, it is only valid to conclude that removing a constraint from a tick-constrained security is beneficial. It was not valid for the SEC to conclude, however, that introducing a 10-tick spread is beneficial for securities that were *not* already tick-constrained.

Second, the Commission misinterprets the academic literature suggesting that a many-tick spread could be problematic. "Commission review of academic literature suggests that there are not consistent results as to how a larger tick size would affect market quality for stocks with wider spreads."[29] This statement is contradicted within the Proposal itself, where the Commission acknowledges that excessively-wide spreads are problematic for certain securities: "for stocks with spreads greater than $0.15, where a $0.01 tick implied more than 15 ticks intra-spread, a $0.05 tick where there were only 3 ticks intra-spread, appeared to provide a superior trading environment."[30] The academic literature appears to be unambiguous on this point. The

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[28] See Letter from Michael Blaugrund, NYSE, Jason Clague, Charles Schwab & Co., and Joseph Mecane, Citadel Securities, to V. Countryman, SEC, Re: Equity Market Structure Proposals (Mar. 6, 2023), https://www.sec.gov/comments/s7-29-22/s72922-20158674-326600.pdf; see also Letter from Cboe to V. Countryman, SEC, Re: SEC Proposal on Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders (Feb. 28, 2023), https://www.sec.gov/comments/s7-30-22/s73022-20158236-326301.pdf; Anna Lyudvig, IEX Supports SEC Equity Market Proposals, Mar. 22, 2023, https://www.tradersmagazine.com/featured_articles/iex-supports-the-sec-proposals/ (noting that a forthcoming IEX comment letter advocates for a $0.005 tick).

[29] NMS Proposal, supra, note 1, at 80282.

[30] Id. at 80322.

first statement is incorrect, and the second statement is correct. Providing an approximately 3-tick spread for previously wide-spread names can improve the trading environment for those securities. Research studying the TSP shows that a $0.05 tick leads to a reduction in spread of more than 10% for excessively wide spreads stocks.[31]

Third, the Commission concludes that widening tick sizes for certain securities could have unintended consequences, yet it cites no evidence for that belief. "[T]he Commission believes that increasing the tick size, for example for higher priced securities, which tend to trade with wider spreads, could result in the inadvertent and unintended constraining of the pricing of such stocks."[32] This assertion cites no evidence for the proposition, yet it is a key factor determining not to address excessively-wide spreads. On the contrary, we believe that there is substantial evidence that excessively-wide spreads impact the market and increase costs.

Research shows that excessively-wide spreads hurt investors with higher costs and issuers with higher costs of capital.[33] Securities with wide spreads have many more odd lots at the top of book. Those with spreads over five cents have odd lots at the top of book approximately 40 percent of the time, those with spreads from 10 cents to 25 cents have odd lots at the top of book 50 to 80 percent of the time, and those with spreads more than 25 cents have odd lots at the top of book 60 to 95 percent of the time.[34] In contrast, stocks with spreads of 2-3 ticks have NBBO at the top of book around 80 percent of the time. Too many ticks in the spread induces the problem of pennying (overbidding existing orders by an economically insignificant amount) and quote flickering, causes order book fragmentation, and diminishes the NBBO

[31] See Barbara Rindi and Ingrid Werner, U.S. Tick Size Pilot (working paper May 30, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3041644 (showing that that a $0.05 tick leads to a 12% reduction in spread for stocks with spreads greater than $0.10.).

[32] NMS Proposal, supra, note 1, at 80282.

[33] Phil Mackintosh, 3 Compelling Reasons for Companies to Split Stocks (Sept. 12, 2019), https://www.nasdaq.com/articles/3-compelling-reasons-for-companies-to-split-stocks-2019-09-12; Phil Mackintosh, A More Intelligent (Tick) Plan for Odd Lots (May 13, 2021) https://www.nasdaq.com/articles/a-more-intelligent-tick-plan-for-odd-lots-2021-05-13.

[34] Mackintosh, Why Intelligent Ticks Make Sense, supra, note 10; Mackintosh, Why Ticks Matter, supra, note 13.

because most odd lot quotes rest inside the NBBO.[35] This has become a bigger problem over the last decade thanks to fewer stock splits.[36]

We believe that the best solution to this problem is a $0.05 tick at the high end. A nickel tick will lower the number of ticks in the spread for securities that already trade sometimes 10 cents wide, or much more, resulting in greater stability and more efficient price formation. This would also lessen the problem of market fragmentation and reduce the number of odd lots for higher-priced securities, improving the NBBO. Having said that, there may be other strategies to address this issue, and we recognize that others may have a different perspective.[37] We recommend that the SEC work with the industry to develop a consensus solution. Further, we ask that it consider a slow rollout that would allow it to reverse course if any unexpected negative consequences occur.

b. Tick Harmonization (Fair Competition for Order Flow)

The SEC proposes to level the competitive playing field among trading venues by amending Rule 612 to apply to all trading, not just to on-exchange trading. "This means that all quotes and orders, regardless of price, would be required to execute in the minimum pricing increments set forth by proposed Rule 612(c) or (d), subject to specified exceptions set forth in proposed Rule 612(e)."[38] This Proposal is intended "to address concerns about the competitive dynamic between exchanges/ATSs and OTC market makers" owing to the "ability of OTC market makers to more readily trade in finer sub-penny increments than exchanges and ATSs."[39]

Nasdaq supports leveling the competitive playing field among trading venues to bolster the NBBO, but also believes that minimum quoting and trading increments need not be the same. Investors should have the opportunity to benefit from price improvement by trading at increments finer than the minimum quote, provided that the price improvement is meaningful.

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35 Phil Mackintosh, Splitting Stocks Changes Them Fundamentally (June 27, 2019), https://www.nasdaq.com/articles/splitting-stocks-changes-them-fundamentally-2020-09-24; Bartlett, Robert P. and McCrary, Justin and O'Hara, Maureen, The Market Inside the Market: Odd-Lot Quotes (Feb. 1, 2022), SSRN: https://ssrn.com/abstract=4027099 or http://dx.doi.org/10.2139/ssrn.4027099.

36 Phil Mackintosh, Three Charts That Show How Dramatic the Drop in Stock Splits Has Been, (Sept. 24, 2020), https://www.nasdaq.com/articles/three-charts-that-show-how-dramatic-the-drop-in-stock-splits-has-been-2019-06-27.

37 We note that the SEC indicated in its analysis that at least some securities with spreads that are many ticks wide would benefit from a $0.05 tick. See NMS Proposal, supra, note 1, at 80322 ("[F]or stocks with spreads greater than $0.15, where a $0.01 tick implied more than 15 ticks intra-spread, a $0.05 tick where there were only 3 ticks intra-spread, appeared to provide a superior trading environment.").

38 Id. at 80283.

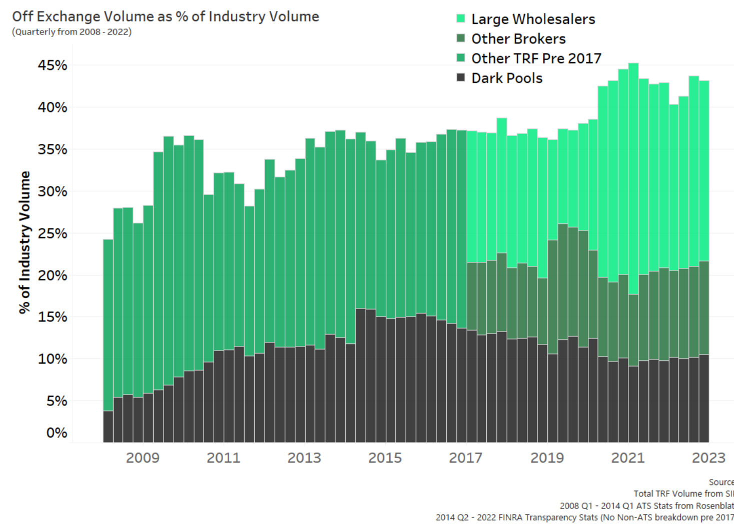
39 Id. at 80274.

i. Leveling the playing field across venues is fair and efficient.

There are two types of "harmonization" in the Proposal: harmonization across venues and harmonization between quotes and trades. The thrust of the Proposal is to address harmonization across venues, but the Proposal as written also requires trades and quotes to trade at the same increments. While simple and elegant in design, we recognize that there are reasons to de-couple minimum quoting and trading increments (at least for retail orders, to preserve opportunities for retail price improvement) while maintaining harmonization across venues.

We support the Proposal to harmonize ticks across venues because it would provide customers with greater choice and transparency. As we said in Optimize, "[t]he inability of lit markets and ATSs to operate in sub-penny increments—while non-ATS dark markets do so freely—constitutes a key disadvantage for lit markets seeking to provide innovative solutions that could serve investors well."[40] This regulatory structure incents customers to move off-exchange, increasing the fragility of the NBBO.

Indeed, there has been a trend over the past decade of order flow moving away from lit venues – a trend that has only accelerated with recent growth in retail investor participation in the equity markets. This trend has weakened the NBBO. Currently, about 45% of U.S. stock trading volume takes place off-exchange, as shown in the following chart.[41]



This is an unprecedented figure, and much higher for many individual securities.[42] As the chart below illustrates, dark market activity accounts for more than 60% of many small-cap stocks trading volumes—with some even approaching 80%.

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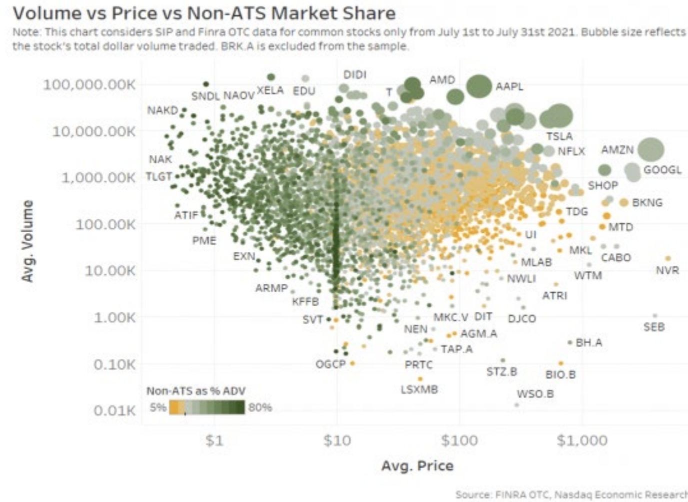
40 Optimize, supra, note 4, at 11.

41 See id. at 7; see also Nasdaq, Nasdaq Review of SEC Market Structure Proposals Webinar, Video, (Feb. 16, 2023), https://www.nasdaq.com/videos/nasdaq-review-of-sec-market-structure-proposals-webinar.

42 See Optimize, supra, note 4, at 7.



We believe that allowing customers to choose between lit and dark venues based on their trading requirements and the venue's services will allow a healthier equilibrium to develop between lit and dark trading, and protect the NBBO.

ii. Retail investors should have access to meaningful price improvement.

The Proposal requires venues to use the same minimum pricing increments for executing trades as for quoting bids and offers. This type of harmonization may erase opportunities for price improvement, however. We therefore suggest standards that allow flexibility in executing trades at finer increments of $0.0010 for retail orders, provided that trades in such finer increments reflect the overall provision of meaningful price improvement to justify such actions (i.e., price improvement that is a meaningful percentage of the spread; perhaps as high as the midpoint, but in any case, greater than $0.0010).[43]

As explained in our analysis of tick sizes, quoting outside of the optimal 2-3 tick spreads leads to queues for tick constrained securities and slower price formation for securities with overly-wide spreads. Execution need not be so constrained for retail orders, provided that price improvement is meaningful. *De minimis* price improvements (otherwise known as pennying, or overbidding existing orders by an economically insignificant amount) undermines the benefits of

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43 We note that commenters from NYSE, Charles Schwab & Co., and Citadel Securities agree with us on this point. See Letter from Michael Blaugrund, NYSE, Jason Clague, Charles Schwab & Co., and Joseph Mecane, Citadel Securities, to Vanessa Countryman, SEC, Re: Equity Market Structure Proposals (Mar. 6, 2023), https://www.sec.gov/comments/s7-29-22/s72922-20158674-326600.pdf ("Separately, we recommend setting a market-wide harmonized trading increment of $.001 for all symbols trading at or above $1.00 per share. In our view, the minimum quoting increment and the minimum trading increment do not need to be the same."). We also support additional sensible exceptions, such as midpoint and benchmark trades (e.g., volume-weighted average price transactions).

harmonization by attracting liquidity off-exchange without any corresponding material benefit for the investor.

Meaningful retail price improvement would not undermine quoting in a similar fashion, and therefore retail investors should be allowed to benefit from that price improvement. Of course, the Commission would need to consider carefully what level of price improvement would be significant enough to be deemed "meaningful," and by what measures. The Commission itself provides one potential option for defining meaningful price improvement in its Order Competition Proposal, as it proposes that broker-dealers must expose segmented retail orders to qualified auctions before internalizing them unless (with certain exceptions) broker-dealers execute the orders at the midpoint of the NBBO. However, price improvement could be meaningful at a percentage of the spread that is somewhat less than half.

c. Access Fees

Although Nasdaq supports adjusting the existing access fee cap to accommodate new tick sizes, Nasdaq opposes the Proposal to the extent that it would reduce the cap – and implicitly, exchange rebates – far beyond what is needed for this purpose, to the detriment of market quality and the NBBO. Indeed, the Commission lacks a reasonable basis for slashing access fees to address its misguided concern that rebates present harmful conflicts-of-interest to broker-dealers. It presents no new data to support its determination that rebates are harmful, let alone harmful enough to justify singling them out for harsher treatment than it affords to other agency-principal conflicts. Indeed, the Commission's Proposal is arbitrary and capricious, as it lacks an evidentiary record justifying its actions, and fails to weigh the market-wide benefits of rebates, which incent market-improving activities and the creation of the NBBO.

In lieu of the Proposal, we recommend that the SEC retain the existing $0.0030 cap on access fees for securities that remain in the existing $0.01 tick bucket, but decrease the cap to $0.0015 for securities in the new $0.005 tick bucket. This recommendation would reduce the cap by half for securities in the $0.005 tick bucket, while still keeping it at a level that would enable exchanges to provide rebates significant enough to attract the displayed quotes that form the NBBO. Before it pursues any further fee cap reduction, we ask the SEC to pause to study the effects of the new $0.0015 cap and act only if it determines that additional reductions are warranted and prudent.

i. *Nasdaq supports adjusting the access fee cap to accommodate new tick sizes, but the proposed reductions far exceed what is necessary for that purpose.*

As Nasdaq stated in its Optimize White Paper, we believe that it would be reasonable for the Commission to adjust the cap to account for new tick sizes.[44] However, the Proposal far exceeds what is necessary for that purpose and would have the effect of unduly harming the

[44] See Optimize, supra, note 4, at 12 ("Nasdaq recognizes that if Commission action successfully updates tick sizes and narrows spreads for certain stocks, then existing exchange access fees and rebates may no longer be appropriate. They may even distort trading economics in a manner that undermines the Commission's goals for competition and Best Execution. Accordingly, we recommend that access fee caps and rebates be adjustable so that they remain reasonably proportionate to the tick size of a security.").

competitive positions of exchanges and the market makers that quote on them. Accordingly, the Proposal does not meet the requirements of Section 15C of the Exchange Act, which prohibits the Commission from adopting a rule that imposes a burden on competition that is "not necessary or appropriate" in furtherance of the purposes of the Exchange Act.[45]

The SEC proposes severe reductions in fee caps – in some cases by more than 80 percent – without providing a reasonable justification as to why reductions of this magnitude are necessary or appropriate to accommodate new ticks.[46] In fact, the SEC's Proposal would actually undermine – if not negate entirely – its efforts in its other Proposals to increase the ability of exchanges to compete effectively for retail order flow. [47]

Although the SEC intends for the Proposal to help exchanges to compete for retail order flow by making it cheaper for broker-dealers to *access* liquidity on exchanges, it would, in fact, offset this competitive benefit by also making it more expensive to *provide* liquidity to exchanges. That is, the Proposal would achieve theoretical cost savings only for liquidity removers. For liquidity providers and market makers that quote on exchanges, the Proposal would effectively increase their costs of doing so by limiting the ability of exchanges to offer them rebates. Further, while the explicit venue fee would be reduced for liquidity removers, we estimate that the spread crossing cost for liquidity removers will go up, at the very least, by the amount of the rebate reduction – but most likely more so – thus resulting in higher all in costs for investors.[48] In sum, the Proposal would not achieve the SEC's objective of making lit markets more competitive or efficient destinations for retail order because it would result in those markets having less liquidity with which retail orders can interact. Agency action that fails to accomplish its stated objective is arbitrary and capricious.[49]

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45 See 15 U.S.C. § 78w(a)(2); see also id. § 78k-1(a)(1)(C)(ii) ("It is in the public interest . . . to assure . . . fair competition . . . between exchange markets and markets other than exchange markets").

46 Furthermore, the Proposal fails to reflect a reasonable analysis by the Commission of its effects on "efficiency, competition, and capital formation," as is required by Section 3f of the Exchange Act. See 15 U.S.C. § 78c(f).

47 The SEC asserts that "[t]echnological advances that would improve the efficiency of exchange functions such as matching trades, as well as changes in the market environment such as the proliferation of high frequency market making that increases the amount of trading volume, could increase the feasibility for exchanges to lower fees and/or rebates without reducing revenues." NMS Proposal, supra, note 1, at 80305, n.456. However, the SEC fails to identify any specific technological advances that would accomplish this.

48 See Phil Mackintosh, V is for Volume, and Its Implications for the Access Fee Pilot (Apr. 4, 2019), https://www.nasdaq.com/articles/v-is-for-volume-and-its-implications-for-the-access-fee-pilot.

49 See Prometheus Radio Project v. FCC, 652 F.3d 431, 471 (3d Cir. 2011) (vacating as arbitrary and capricious a definitional provision that "lack[ed] a sufficient analytical connection to the primary issue [the] Order intended to address"); see also MCI

The Proposal would also potentially undermine the competitive positions of exchanges and the market makers that quote on them by seeking to limit their ability to charge fees and collect rebates for their respective services. The SEC asserts that its "proposed level of the access fee caps seeks to balance the need to reduce the access fee caps to accommodate the reduction in the minimum pricing increments and preserve the ability of the agency market business models to charge fees for access."[50] Although the SEC asserts that it achieves this balance by maintaining existing rates of exchange capture with proposed combination of new tick sizes and access fee caps,[51] the SEC contradicts itself on this point when it acknowledges that the capture rate could actually decrease as a result of the Proposals.[52] Indeed, even if the SEC was correct that the *rate* of capture would not diminish, it nevertheless projects that the *net* capture or revenue impact of the proposed access fee caps could be negative.[53] Such projected impacts are contradictory and hardly consistent with a pro-competitive approach.

i. The Commission fails to establish that changes to the cost of trading justify its proposed reductions to the access fee cap.

The Commission also fails to substantiate its position that sharp fee cap reductions are needed because the current cap no longer bears a reasonable relationship to the actual costs of a trade.[54] This argument demonstrates a fundamental misunderstanding of exchanges. Exchanges operate as platforms, and they have always been high fixed-cost, low marginal cost businesses. Like book publishers, exchanges cannot engage in marginal cost pricing while remaining viable business enterprises. Moreover, access fees and rebates represent more than the simple economic costs to an exchange of effecting a trade; they also reflect the value of the information that quotes provide to the market, and the value to participants of having access to those quotes. Lit quotes provide the market with invaluable information about pricing and liquidity. Participants utilize lit quotes, not only to trade on exchanges, but also to trade elsewhere, in other parts of the market ecosystem which rely upon or build upon lit quotes.

Telecomms. Corp. v. FCC, 57 F.3d 1136, 1143 (D.C. Cir. 1995) (vacating agency action on other grounds but expressing "serious concerns" that the challenged action did not "promote the agency's stated goal").

50 NMS Proposal, supra, note 1, at 80269-70.

51 See id. at 80290-91 ("The two proposed access fee caps would allow trading centers largely to maintain their current net capture rate and not impair the agency market business models, though some business models may change.").

52 See id. at 80326 ("The Commission nonetheless acknowledges uncertainty over whether this 2 mil capture rate would persist or be lower.").

53 See id.

54 See id. at 80289 ("The current access fee caps were designed to prevent fees from constituting an excessive percentage of the share price and reflected the then current rates that were assessed by trading centers. In the intervening seventeen years since rule 610 was adopted, the markets have evolved dramatically. Market innovations and technological efficiencies have reduced transaction and trading costs (e.g., lower commissions and more narrow bid/ask spreads) in the equities markets.").

Even if changes to exchanges' costs of trading was a valid basis for reducing the access fee cap, the Commission still fails to establish what is the actual cost to an exchange of a trade, the level of access fee cap that would constitute a reasonable relationship to that cost, and most importantly, that the SEC's proposed reduced fee caps do, in fact, bear a reasonable relationship to the actual costs to an exchange of a trade. The tasks of determining such costs and setting appropriate rates based upon those costs are inherently difficult, especially in an industry with diverse participants and business models; these are tasks that a government agency like the Commission is ill-suited to tackle and from which it should refrain.

ii. The Commission fails to justify its proposed fee cap cuts as necessary and appropriate to address its unfounded concerns about exchange rebates

Nasdaq opposes reductions in fee caps to the extent that the SEC expressly intends for them to address perceived conflicts-of-interest associated with exchange rebates. Although the SEC asserts that it intends for fee cap reductions to accommodate new proposed tick sizes, it also states that one of its other aims in reducing access fees is to "lower the total amount of access fees collected and rebates distributed, reducing, though not eliminating, any distortionary effects of exchange rebates on order routing and likely improving market efficiency." [55] This objective lacks an evidentiary predicate, as the SEC fails to support its assertion that a distortion exists, that it is harmful, or that it is harmful enough to outweigh the countervailing benefits of rebates. Moreover, a reduction in the fee cap is unnecessary to address the SEC's underlying concerns, which, to the extent they were valid, can be addressed through less-disruptive alternatives.

The Proposal reflects a flawed understanding of exchange rebates and their integral value to the operation of well-functioning, fair, and orderly equity markets. In fact, rebates are essential to market quality as they encourage market participants to act as market makers and to provide the two-sided quotes that make the equity markets function soundly. Market makers post buy and sell orders simultaneously and profit from capturing spread. They do so at the risk of adverse selection by those with superior information as well as unexpected market volatility. To compensate for these risks – and minimize the losses that could ensue – market makers widen spreads. In certain cases, if the risks are too great for a security in comparison to the spread, market makers may choose to refrain from making a market in that security. Exchange rebates serve to cushion market makers against the risks of adverse selection and price volatility, thereby incenting them to continue to make markets, even in thinly-traded or volatile securities, and to do so with tighter spreads than they would otherwise.

Rebates are also critical tools for incenting market participants to display the price-forming quotes that comprise the NBBO. The NBBO – the public reference price for trillions of dollars of public company capitalization and investor savings – is comprised exclusively of trading interest displayed on public exchanges, such as Nasdaq. The Proposal would limit exchanges' ability to gather liquidity, and it would thereby weaken the public reference price.

Rebates act as an incentive for market participants to quote. Displayed quotes are essentially free options for the rest of the market to trade at a specific price. Economically, these options have a real value, and rebates act as an incentive for liquidity providers to provide these options to the market. If rebates are reduced or removed, we expect that quoting will decrease as

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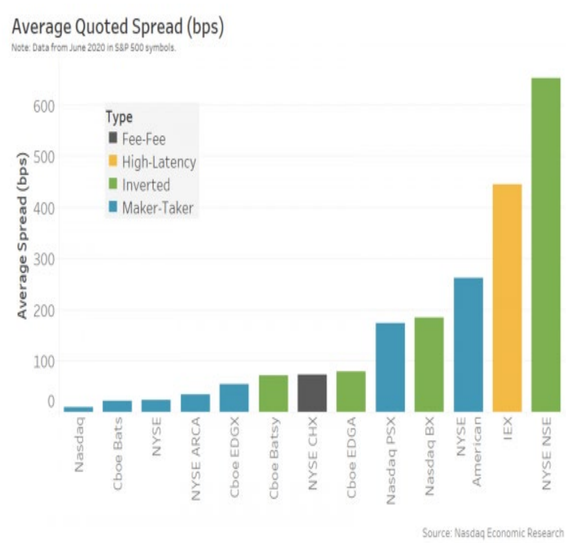
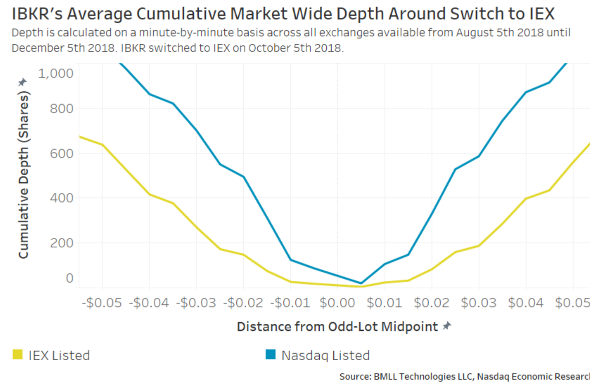
55 Id. at 80303.

the firms quoting (providing the option) have less of an incentive to do so. In effect, these firms are providing an option to trade at a price for little to no compensation when they could alternatively remove liquidity (which provides no optionality to the market). This framework suggests that reducing rebates decreases the prevalence of displayed quotes in the market.

Rebates also incentivize market participants to pool displayed liquidity in their markets, which deepens the NBBO and makes it more readily accessible to investors. This helps to tighten spreads, which reduces transaction costs for investors. Indeed, average spreads on exchanges that offer rebates are significantly less than those that do not.



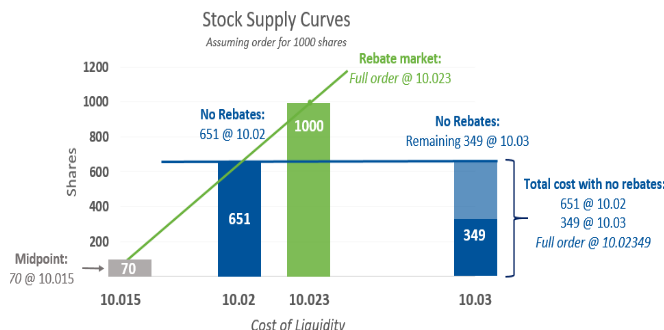
Further proof of this can be seen by comparing spread costs and depth in IBKR stock when it switched its listing from Nasdaq to IEX. Although IEX has a speed-bump to avoid adverse selection, it offers no rebates. By contrast, Nasdaq has firm quotes and offers rebates to any liquidity provider with an execution. The data in the chart below shows while listed on IEX in 2018, IBKR spreads increased and depth fell compared to while it was listed on Nasdaq.



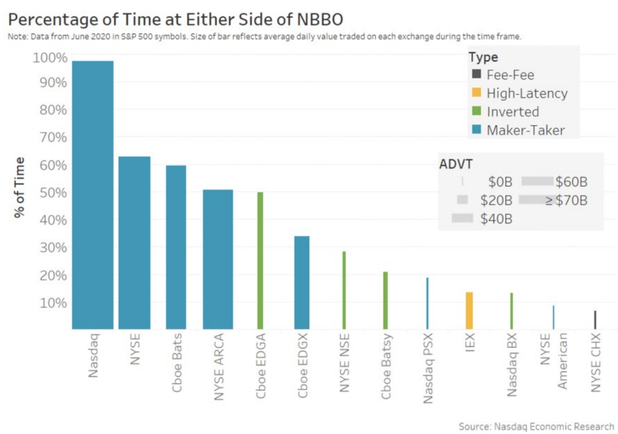
Importantly, because rebates also increase depth, it is possible that the costs of access fees for liquidity takers are more than offset by the tighter spreads and depth that they create. For example, the chart below shows how rebates increase the spread capture achieved by a market maker, potentially from $0.01 to around $0.016 when both their bid and offer are

executed. We also know from the TSP and other work that supply and demand curves are linear. Thus, the rebate results in additional supply at the inside quote, shown in the diagram as the NBBO depth increasing from 651 to 1,000. For a larger investor, buying 1,000 at the maker taker venues actually costs less than buying 651 at a "free" venue and the residual 349 shares one cent higher.

Rebates also improve market quality by incenting market makers to quote at the NBBO and in thinly-traded securities. Exchanges that offer rebates have two-sided quotes in more securities, more often, and with more depth than those market centers that do not provide rebates.



That is important for the thousands of important growth companies in the market. Other research shows that tighter spreads help these companies to improve liquidity and reduce their costs of capital,[56] potentially adding almost $100 billion to the wealth of investors.[57] Given the SEC's role in encouraging capital formation, its failure to account for these facts would be arbitrary.



iii. The Commission's proposal to limit exchanges' ability to provide meaningful rebates would harm the markets.

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56 See J.C. Lin et al., Stock Splits, Trading Continuity, and the Cost of Equity Capital, (Jan. 1, 2009), U. of St. Thomas, Minn. Accounting Faculty Publications, https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1011.3751&rep=rep1&type=pdf.

57 See Sida Li & Mao Ye, Discrete Price, Discrete Quantity, and the Optimal Price of a Stock, supra, n.16.

By diminishing exchanges' ability to offer meaningful rebates, the Proposal would also negatively impact liquidity provision. That is, market makers may no longer have adequate incentives to make markets in some securities, or may require wider spreads to compensate them for the risks of doing so. The SEC dismisses this effect by noting that the Proposal would diminish market distortions that lead to oversupply in liquidity for securities with narrow spreads.[58] This premise, however, is incorrect as tick constraints are the main driver of over-supply of liquidity, not rebates. Insofar as the Proposal would lower tick sizes to address the problem of tick constraints, the SEC would solve the problem of oversupply without the need to restrict exchange rebates. At the very least, it would be prudent to observe the impact of reducing tick constraints on oversupply before proceeding to reducing rebates. Moreover, the SEC's Proposal says nothing about its impact on the provision of liquidity in thinly-traded securities, including those of many small and medium sized companies, where in the absence of rebates, market makers may no longer find it profitable to make tight markets. Nasdaq notes that it has been a stated priority of the Commission, in recent years, to prompt exchanges to incentivize the trading of thinly-traded securities due to concern that the current market structure presents disadvantages for thinly-traded securities.[59] It would be arbitrary and capricious for the Commission to adopt the Proposal without acknowledging and explaining its decision to jettison this policy.[60]

In sum, by impairing the ability of exchanges to offer meaningful rebates to broker-dealers, the SEC risks compromising a well-functioning, fair and orderly market, and risks damaging companies' ability to efficiently raise capital. The SEC does so without offering any evidence that such actions are warranted because it fails to substantiate the harm supposedly

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[58] NMS Proposal, supra, note 1, at 80328 ("The primary likely effect of the decline in rebates disbursed and access fees collected would be to reduce the amount of liquidity provision—particularly among stocks with narrow spreads. This reduction in liquidity provision may not be harmful to trading quality for these stocks, under the reasoning that the reduction in rebates would alleviate currently existing distortions that lead to an oversupply of liquidity relative to the demand of liquidity, and would better allow the forces of supply and demand to determine market prices and lower overall transaction costs for liquidity demanders.").

[59] See Securities Exchange Act Release No. 34-87327 (Oct. 17, 2019), 84 FR 56956, at 56956 (Oct. 24, 2019) ("The Commission is issuing this Statement to facilitate the ability of market participants to develop innovative proposals for changes in equity market structure that are designed to improve trading in thinly traded securities. Although the Commission believes that the current equity market structure generally works well for securities that trade in higher volume, the Commission has concerns that the current 'one-size-fits-all' equity market structure, as largely governed under Regulation NMS, may not be optimal for thinly traded securities.") (internal citation omitted).

[60] See Sw. Airlines Co. v. FERC, 926 F.3d 851, 856 (D.C. Cir. 2019) ("A full and rational explanation becomes especially important when . . . an agency elects to shift its policy or depart from its typical manner of administering a program." (alterations and internal quotation marks omitted)).

attributable to rebates.[61] Instead, the SEC merely assumes that rebates present a conflict-of-interest to brokers that is harmful to investors, and that the harmful effects of that conflict are substantial enough and costly enough to justify the Proposal's drastic reductions to the existing access fee caps. That type of unsubstantiated assumption is insufficient to justify a rulemaking that has the potential to upend the way in which exchanges incentivize market quality.

iv. The Commission's proposal to restrict rebates is arbitrary and capricious and fails to heed the lessons of the Transaction Fee Pilot.

As recently as three years ago, the Commission attempted to conduct a pilot program for the express purpose of determining *whether* access fees and rebates are distortive and require further regulation. In explaining its rationale for the pilot program, the SEC acknowledged that "the Commission currently 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." [62]

The Commission did not ultimately undertake the Transaction Fee Pilot (after a court stopped it from doing so),[63] and the Commission offers nothing new in the Proposal to demonstrate that it now has the data it lacked then to reach a reasonable conclusion that maker-taker rebates are indeed problematic and warrant regulatory action. In fact, the Proposal copies portions of the Commission's arguments verbatim from its 2018 proposal for the Transaction Fee Pilot.[64] At most, the Commission cites to a few academic studies that raise concerns about rebates, but all of these studies pre-date or coincide with the Transaction Fee Pilot and ignore contrary evidence.[65] By relying upon outdated studies and one-sided arguments, and by making

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61 See Nat'l Oilseed Processors Ass'n v. OSHA, 769 F.3d 1173, 1178 (D.C. Cir. 2014) ("The reviewing court's task, then, is to ensure the agency has . . . adduced substantial evidence in the record to support its determinations," which "includes requiring the agency to identify relevant factual evidence, to explain the logic and the policies underlying any legislative choice, to state candidly any assumptions on which it relies, and to present its reasons for rejecting significant contrary evidence and argument.") (internal quotation marks omitted).

62 See Securities Exchange Act Release No. 34-84875 (Dec. 19, 2018), 84 FR 5202, at 5203 (Feb. 20, 2019).

63 See N.Y. Stock Exch. LLC v. SEC, 962 F.3d 541 (D.C. Cir. 2020).

64 See Securities Exchange Act Release No. 34-82873 (Mar. 14, 2018), 83 FR 13008, at 13010-11 (Mar. 26, 2018).

65 For example, in 2018, Nasdaq's own analysis demonstrated that most routing decisions incurred no opportunity cost from the purported conflict between brokers and investors regarding fees and rebates. See Phil Mackintosh, Routing 101: Identifying the Cost of Routing Decisions (Dec. 14, 2018), https://www.nasdaq.com/articles/routing-101-identifying-cost-routing-decisions-2018-12-14; see also Letter from J. Davis, VP and Deputy General Counsel, Nasdaq, Inc., to B. Fields, Re: Proposed Transaction Fee Pilot (Release No. 34-82873; File No, S7-05-18), dated Dec. 17, 2018, https://www.sec.gov/comments/s7-05-18/s70518-4789307-176927.pdf; Letter from E.

no independent effort to validate its concerns, the Proposal lays bare the absence of support for its condemnation of rebates and for its proposed remedy. The SEC should be mindful of the lessons of its failed endeavor to experiment with reducing or eliminating rebates without having first established that they are problematic.[66] Indeed, as the D.C. Circuit stated in its opinion invalidating the Transaction Fee Pilot, "[n]ormally, unless an agency's authorizing statute says otherwise, an agency regulation must be designed to address identified problems."[67] The SEC still has not substantiated that rebates actually pose a problem that warrants a regulatory solution.

Even if the SEC had demonstrated that exchange fees and rebates present harmful conflicts-of-interest for brokers, it never even attempts to weigh the purported harmful effects of such purported conflicts against the beneficial effects of rebates.[68] That is, the Commission takes an unreasonably narrow view of rebates that emphasizes only their potential negative effects, while inexplicably ignoring the aforementioned market-wide benefits of rebates that, in Nasdaq's view, more than offset such theoretical costs.[69] Because the Commission has failed to

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Knight, EVP and General Counsel, Nasdaq, Inc., to B. Fields, Re: Proposed Transaction Fee Pilot (Release No. 34-82873; File No, S7-05-18), dated May 25, 2018, https://www.sec.gov/comments/s7-05-18/s70518-3718533-162485.pdf; Letter from Elizabeth K. King, General Counsel and Corporate Secretary, NYSE, to B. Fields, Re: Proposed Transaction Fee Pilot (Release No. 34-82873; File No, S7-05-18), dated May 31, 2018, https://www.sec.gov/comments/s7-05-18/s70518-3755194-162578.pdf.

66 See N.Y. Stock Exch., 962 F.3d at 546 ("Nothing in the Commission's rulemaking authority authorizes it to promulgate a "one-off" regulation like Rule 610T merely to secure information that might indicate to the SEC whether there is a problem worthy of regulation.").

67 Id. The NMS Proposal would be even more problematic than the Transaction Fee Pilot because the changes that the NMS Proposal prescribes would be permanent, rather than temporary.

68 Agency action is arbitrary and capricious if, for example, an agency "entirely failed to consider an important aspect of the problem, *offered an explanation for its decision that runs counter to the evidence before the agency*, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983)(emphasis added). An agency is required to "examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." Id. (quoting Burlington Truck Lines v. United States, 371 U.S. 156, 168 (1962)) (internal quotation marks omitted); Md. People's Counsel v. FERC, 761 F.2d 768, 779 (D.C. Cir. 1985) (an agency's failure to show that "more good than harm will come of its action" is arbitrary and capricious).

69 The Commission acknowledges that some argue that rebates are beneficial to the markets. See NMS Proposal, supra, note 1, at 80288 ("Conversely, others argue that the maker-taker model may have positive effects by enabling exchanges to compete with non-exchange trading centers and by narrowing quoted spreads by subsidizing posted prices. Specifically, maker-taker fees may narrow displayed spreads in some securities

consider the benefits of rebates and the harm that would flow from eliminating, or drastically reducing, rebates, it has failed to satisfy its obligation under Section 3(f) of the Exchange Act as well as the Administrative Procedures Act.[70] Where the Commission "duck[s] [a] serious evaluation of the costs" imposed by a rule, it acts arbitrarily and capriciously.[71]

The SEC also ignores the fact that its other Proposals are, by its own admission, adequate to eliminate or otherwise manage the purported conflict that rebates present, thereby eliminating any reasonable basis for slashing the access fee caps as it proposes.[72] For example, the SEC's

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insofar as the liquidity 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. In turn, that displayed liquidity may establish the NBBO, which is often used as the benchmark for marketable order flow, including retail order flow, that is executed off-exchange by either matching or improving upon those prices. Accordingly, retail orders may benefit indirectly from the subsidy provided by maker-taker exchanges.")(citations omitted). However, the Commission does little to actually deal with these benefits.

At most, the Commission dismisses them as being unnecessary in a new tick regime. For example, it dismisses the concern that restricting rebates would widen spreads by arguing that a "reduction in tick size also reduces the need for intra-tick pricing." Id. at 80329. But this argument ignores the fact that facilitation of intra-tick prices is not the only function of rebates. As noted above, rebates also tighten spreads by buffering participants against adverse price impacts. The value of rebates in this regard would not diminish in a smaller tick regime. In any event, as discussed above, the value of rebates is borne out by the facts: maker-taker exchanges perform better, and provide better market quality, than do markets without rebates.

The SEC also suggests that restricting rebates "could also simplify markets by reducing the need for complex order types that are designed to take advantage of the system of fees and rebates." See id. at 80288. This argument is mistaken. So-called "complex" order types do not exist solely to help participants to avoid fees or maximize rebates; instead, they also exist to help participants to minimize information leakage and signaling, as well as to minimize risks of adverse selection (e.g., Nasdaq's Midpoint Extended Life Order and IEX's D-Limit). It is worth noting that many "complex" order types such as pegging, reserve, discretion are used mostly on behalf of institutions and asset managers. Such order types would not disappear simply because rebates are reduced.

70 Section 3(f) of the Exchange Act obligates the Commission to "apprise itself—and hence the public and the Congress—of the economic consequences of a proposed regulation." Bus. Roundtable v. SEC, 647 F.3d 1144, 1148 (2011) (internal quotation marks omitted). "By ducking serious evaluation of the costs" imposed by a rule, the Commission acts arbitrarily and capriciously." See id. at 1152.

71 Id.

72 The Proposal is unfair, moreover, as it cherry-picks rebates for restriction while ignoring other conflicts that exist in the markets. It (inaptly) conflates the conflicts-of-interest it perceives for PFOF with those it perceives for rebates, and yet it only proposes to impose

Proposal to render exchange fees and rebates determinable at the time of execution will mitigate, if not eliminate, any conflict by enabling brokers to pass-through rebates and fees to their customers. In the NMS Proposal, the SEC expressly acknowledges as much:

> If broker-dealers could more easily pass-through rebates to their customers, the potential financial benefit of such rebates would inure to the customer, not the broker-dealer. Thus, the potential conflict of interest faced by a broker-dealer when routing its customers' orders to a market for execution would be reduced or eliminated because the broker-dealer would have no direct economic interest in the level of the rebate and would be able to better objectively assess best execution for each customer's order.[73]

To the extent that brokers choose not to pass-through fees and rebates, any residual conflict could be adequately addressed through the duty of best execution – as manifested either in its current form or in the proposed Regulation Best Execution. That is, broker-dealers would be required to demonstrate why their order routing decisions were consistent with best execution notwithstanding their receipt of discounted fees or rebates from exchanges. The Proposal is therefore doubly unnecessary—it addresses an unsubstantiated problem and ignores the fact that, in any event, the supposed problem would be remedied by other pending SEC action.

i. Nasdaq recommends that the Commission lower the access fee cap to be \$0.0015 for securities in the \$0.05 tick bucket and maintain the \$0.0030 rate for securities that remain in the \$0.01 tick size bucket.

As an alternative to the Commission's Proposal to reduce the access fee cap sharply, Nasdaq recommends a more measured approach. We recommend that the Commission maintain the existing \$0.0030 access fee cap for those securities that remain in the current \$0.01 tick size bucket, but reduce the cap by half to \$0.0015 for securities that the Commission places into a new \$0.005 tick size bucket. Although this alternative would maintain access fee caps at the same level for securities with a \$0.01 tick size, the reduction to \$0.0015 for securities with a tick size of \$0.005 presents an opportunity for the market and the Commission to understand the impact for lower cap rates for some securities – albeit the Commission and others will need to be careful to parse the difference in impact from the tick size change and the fee cap change.

Nasdaq's approach would be simpler, more familiar, and less drastic than the Proposal. The SEC itself acknowledges the benefits of such an alternative in the Proposal: "a reduction in access fees that is proportionate to the tick size reduction would reduce trading costs and increase the competitiveness of on-exchange trading."[74] The SEC also notes that this alternative

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a (lower) cap on access fees/ rebates, while imposing no cap upon PFOF or other forms of remuneration.

73 NMS Proposal, supra, note 1 at 80289, n.290.

74 Id. at 80291; see also id. at 80347 ("As an alternative to the proposal, the Commission could implement an access fee cap that applies proportionally at any tick size. This alternative would carry the same implementation costs as the proposal. It would also allow fees and rebates to facilitate similar intra-tick pricing as the current system of fees and rebates, which can narrow spreads in certain instances. It would also allow for

approach "would also allow fees and rebates to facilitate similar intra-tick pricing as the current system of fees and rebates, which can narrow spreads in certain instances" as well as "allow for greater rebates to be paid in stocks with wider ticks, which under the proposal are those with wider spreads, which could lead to a more efficient manner of rewarding liquidity provision."[75]

ii. The Commission should pause to validate its approach before proceeding with any proposal to reduce access fee caps below $0.015.

As discussed above, neither the record nor the Commission's reasoning supports reductions in the access fee caps beyond an adjustment to account for new tick sizes. If the SEC nevertheless concludes that access fee cap reductions below $0.0015 may be warranted, we ask that it do so only after pausing to study the impacts of reducing the current cap to $0.0015 and then using the results of that study to assess whether a further reduction is appropriate and prudent.

As noted earlier, the equity markets are highly complex and interconnected. Even small changes to one variable can have unanticipated impacts elsewhere. Thus, any sharp and sudden change in access fee caps could be dangerous. Accordingly, we recommend that if the Commission wishes to proceed with access fee cap reductions beyond the $0.0015 cap—which, to be clear, we believe is unwarranted and unsubstantiated on the current record—the SEC should do so gradually and in phases, with pauses between each phase to examine the effects.

Assuming that the SEC decides to proceed with its own tick size proposal in lieu of Nasdaq's alternative, then it should neither change the access fee caps all at once for all of the new proposed tick sizes, nor change the caps all at once to the full extents proposed. Instead, the SEC should first proceed by testing an incremental access fee cap reduction (from $0.0030 to $0.0015) in the first of the new lower tick size buckets ($0.005).

For the Commission's Proposal, the simplest way to do this would be to utilize the pauses that the Commission would impose before moving securities to successive sub-penny tick buckets. After moving securities from the $0.01 bucket to the $0.005 bucket for the first time, and adjusting the corresponding access fee cap accordingly, the Commission should pause before reducing the cap further for securities in the $0.005 tick size bucket or moving on to transfer securities to the next smallest tick size bucket and access fee cap. At minimum, this pause could coincide with the evaluation periods that the SEC prescribes for determining which securities will move on further to a smaller tick bucket,[76] but the time period should be long enough for the Commission to determine how the tick-constrained securities that moved into the current bucket are trading with the new access fee cap, and whether the transition to a new tick size and access fee cap are having the intended effects. Only if the Commission validates its approach at a given phase should it proceed to the next phase of implementation. If the study does not validate the

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greater rebates to be paid in stocks with wider ticks, which under the proposal are those with wider spreads, which could lead to a more efficient manner of rewarding liquidity provision.").

75 Id.

76 See id. at 80284 (providing for staggered implementation of the new proposed tick size regime over the course of five quarters).

Commission's approach, then we ask that it be open to stopping, reversing course, or changing course once it understands why securities in the new bucket are not trading as expected.

d. Transparency of Pricing Information

Nasdaq does not object in principle to the Commission's Proposal to require exchanges to set volume-based access fees and rebates as of the time of execution.[77]

To be clear, Nasdaq believes that exchange pricing is already highly-transparent to market participants and investors – and uniquely so as compared to other types of market centers.[78] As the Commission notes, "National securities exchanges establish and amend their fee schedules by filing proposed fee rule changes, pursuant to section 19(b) of the Exchange Act and rule 19b–4 thereunder, for Commission review."[79] Exchanges are required to demonstrate that each such proposed fee is consistent with the Exchange Act by being reasonable, an equitable allocation, not unfairly discriminatory, and not unduly burdensome to competition.[80] Even though exchange fees are immediately effective upon filing, they remain subject to public comment and Commission scrutiny after filing. Indeed, they are subject to suspension for 60 days after filing if the Commission determines – through public comment or otherwise – that the

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[77] See id. at 80292 ("To provide further transparency regarding transaction pricing, the Commission proposes to amend rule 610 to add a new subsection (d) ''Transparency of Fees,' which would prohibit a national securities exchange from imposing, or permitting to be imposed, any fee or fees, or providing, or permitting to be provided, any rebate or other remuneration (e.g., discounted fees, other credits, or forms of linked pricing) for the execution of an order in an NMS stock unless such fee, rebate or other remuneration can be determined at the time of execution. Under the proposal, any national securities exchange that imposes a fee or provides a rebate that is based on a certain volume threshold, or establishes tier requirements or tiered rates based on minimum volume thresholds, would be required to set such volume thresholds or tiers using volume achieved during a stated period prior to the assessment of the fee or rebate so that market participants are able to determine what fee or rebate level would be applicable to any submitted order at the time of execution.").

[78] Even with recent proposed Commission enhancements to ATS pricing transparency, see Securities Exchange Act Release No. 34-94062 (Jan. 26, 2022), 87 FR 15496 (Mar. 18, 2022), Reg. ATS does not and would not require ATSs to provide the same level of transparency to customers as it requires for exchanges. For example, ATSs would not be required to demonstrate that their fees are consistent with Exchange Act standards, and rather than requiring ATSs to publish their full fee schedules on their websites, Form ATS-N requires ATSs to describe the types of fees, fee structures, variables that impact fees, differentiation in fees among customer types, and provide a range of potential fees. Meanwhile, no price transparency requirements exist for other types of non-exchange, non-ATS market centers, including wholesale market makers, and single-dealer platforms, where bespoke bilateral pricing agreements are common.

[79] NMS Proposal, supra, note 1, at 80292, n.321.

[80] See 15 U.S.C. § 78f(b)(5).

fees are inconsistent with the Exchange Act.[81] Exchange fees, like all exchange rules, also are required by law to be published on exchanges' websites within two business days after filing them with the Commission, and the Commission also publishes them in the Federal Register and on its own website.[82] On its own accord, Nasdaq furthermore publishes alerts to market participants, in advance of filing any proposed rule changes, to help educate them about fees and rebates and how they are calculated.[83]

Nasdaq also believes that our existing fee structure – which includes many pricing programs that support market quality – is already aligned with the interests of market participants and investors. Moreover, a fee structure that rewards our most active customers (and contributors to market quality and the NBBO during a month, as measured by the volumes of liquidity they add to and remove from our exchanges) with discounts and rebates at the end of each month is a rational and ubiquitous business practice across many industries.[84] We believe that it benefits market participants and investors by allowing us to target incentives where needed to improve the quality of our markets on a going-forward basis.

Nevertheless, Nasdaq appreciates the Commission's desire to ensure that exchange transaction pricing is as transparent as possible. We are open to reforms that will offer added clarity to market participants and investors, provided that the SEC also holds other market centers to the same standards of transparency.

We agree with the SEC that this Proposal has the potential to facilitate broker-dealers in passing-through access fees and rebates to their customers, and in doing so, it could alleviate concerns (however misplaced) about perceived conflicts-of-interest associated with the maker-taker model and the provision of exchange rebates to broker-dealers.[85] When coupled with the

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81 See 15 U.S.C. § 78s(b)(3)(A)(ii).

82 See 17 CFR § 240.19b-4(l), (m).

83 Nasdaq's Equity Trader Alerts, https://www.nasdaqtrader.com/Trader.aspx?id=archiveheadlines&cat_id=2/.

84 Volume-based tiered pricing is a standard, pro-competitive feature of many industries, including heavily-regulated industries such as retail banking (e.g., preferred checking accounts with benefits for a bank's largest depositors). It is a rational pricing model that rewards customers that contribute the most to a firm, including by increasing the value of the firm's platform to other customers. It is also a model that Nasdaq and its competitors have long employed with the assent of the Commission. It exists among virtually all exchanges and ATSs, both in the U.S. and abroad. It is reflected in countless rule filings. Although pricing tiers differentiate among customers with respect to transaction pricing, this differential treatment is fair as it is based upon customer activity and contributions, and not the size or identity of a customer. It is worth noting that even less-active participants often benefit from tiers through sponsored access arrangements and other means of aggregating their volumes with other participants.

85 See NMS Proposal, supra, note 1, at 80329-30 ("Access fees create potential conflicts of interest. Passing on fees and rebates to end customers could eliminate such distortions

new proposed best execution regime, which will in turn address perceived conflicts for those broker-dealers that choose not to pass-through their fees and rebates to customers, [86] this Proposal should eliminate any reasonable basis for the SEC to proceed with dramatic decreases in access fee caps that would go far beyond that is needed to accommodate a new tick regime.

In adopting this Proposal, however, the SEC must be mindful of potential negative impacts on market participants and market quality. Although we understand that part of the motivation for the Proposal is to help small broker-dealers compete against established firms, the Proposal might actually have the opposite effect by making participation in exchanges' growth programs more expensive in the initial month of participation. It would also limit exchanges' ability to incent market makers and other participants to quote at the NBBO and to do so in a large number of securities, including thinly-traded securities. If the SEC moves forward with this Proposal, then we ask that it exempt growth programs and special pricing programs that reward market makers and other participants for quoting at the NBBO and providing market quality.

e. Acceleration of MDI Rule Provisions Relating to Odd and Round Lots

The timing, and perhaps the scope, of the SEC's Proposal to accelerate certain provisions of its Market Data Infrastructure Rule needs to be recalibrated.

The Commission proposes to "accelerate implementation of the round lot and odd-lot information definitions adopted under the MDI Rules so that this information is made available to investors within the national market system sooner."[87] Odd lot information would be defined as "(1) odd-lot transactions, and (2) odd-lots at a price greater than or equal to the national best bid and less than or equal to the national best offer, aggregated at each price level at each national securities exchange and national securities association."[88] Dissemination of Odd Lot

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and lead to improved overall order execution for end customers. Additionally, the ability to pass on the fees and rebates to end customers might also make customers more aware of these fees and rebates so that they can better inform their broker-dealers how to route with respect to fees and rebates which could also lead to better execution for end customers.").

86 The SEC's best execution concerns regarding the impacts of rebates on broker-dealer routing determinations are only relevant in the agency context. By contrast, market makers – whose activities account for a majority of liquidity provision on exchanges – trade on a principal basis. Market makers are not subject to best execution when acting as principals, such that no such concerns exist with their receipt of exchange rebates.

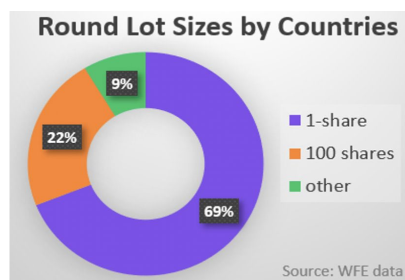
87 Id. at 80270; see also id. at 80294 (explaining that the MDI Rule set the following parameters for round lot sizes: "for NMS stocks priced $250.00 or less per share, a round lot will be 100 shares; for NMS stocks priced $250.01 to $1,000.00 per share, a round lot will be 40 shares; for NMS stocks priced $1,000.01 to $10,000.00 per share, a round lot will be 10 shares; and for NMS stocks priced $10,000.01 or more per share, a round lot will be 1 share.").

88 Id. at 80270.

and Round Lot information would be implemented "90 days from the publication of any Commission adoption of an earlier implementation of the round lot and odd-lot information definitions in the Federal Register."[89]

Dissemination of odd lots on the SIPs will take much longer than the projected 90 days. The SIP Operating Committee recently determined that dissemination of quotes "at or better than the protected NBBO"[90] would take 12 or more months to implement.[91] This is more limited than the Proposal, which will significantly increase the volume of information to be disseminated, and also may increase the amount of time that it will take to implement.

The added message volume may also lead to delays in processing SIP information. In light of the possible delay and negative impact on SIP performance, the SEC should consider limiting the directive to odd lot quotes "at or better than the protected NBBO," as described in the UTP/CTA Odd Lot proposal. As the SEC thinks about these short-term solutions, we wish to note that modern markets do not need round lots, such that the ultimate goal should be to eliminate them altogether. Round lots are a vestige of a bygone era in which markets were floor-based and operated manually. Given that modern computer trading systems frequently disregard round lot conventions, it seems inconsistent that regulations designed to modernize markets still retain this artifact of the past. Most countries around the world have already eliminated round lots and replaced them with alternative tick regimes, as shown below:



We expect that implementation of an effective tick reform proposal may alleviate the need to speed implementation of the round and odd lot proposals. Marketable ticks force odd lots onto the same tick as larger orders. Adjusted tick sizes will foster spreads where economically meaningful bids and offers will accumulate regardless of round lot size. Elimination of the round lot altogether will make building algorithms simpler and quotes more competitive, resulting in an even more consistent market, with more securities able to trade with optimal spreads and depth.

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89 Id. at 80298.

90 Proposal of the CTA and UTP Operating Committees Regarding Odd Lots on the SIPs, (Mar. 2022), https://www.utpplan.com/DOC/Odd_Lots_Proposal.pdf

91 See Letter from Robert Books, Operating Committee Chair, UTP and CTA/CQ Plans, to V. Countryman, SEC, Re SEC Proposal on Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders (Mar. 28, 2023).

For the time being, however, implementation of the tiered round lot system is a reasonable step toward the ultimate goal of eliminating round lots altogether. We urge the Commission to recognize it as such, and plan for a full transition to single-share round lots.

IV. ORDER COMPETITION RULE

Nasdaq is supportive of changes that provide greater opportunity for retail and institutional investor orders to interact in a competitive public market. The current structure contains regulatory disparities that make it difficult for such interactions to occur. If certain disparities were to be addressed, exchanges would have the opportunity to provide platform solutions to enable more diversified interactions between these different types of investors and market participants. While Nasdaq agrees with the goals behind the Commission's Proposal, it is not clear that the particular solution that the Commission proposes in its Order Competition Rule serves these goals. While retail auctions generally could provide a more competitive environment for retail investors (as well as other investor types) to interact, the effectiveness of *qualified auctions* in doing so – with its novel and prescriptive design – is speculative.

Instead of betting everything on a single untested and costly solution, Nasdaq urges the Commission to consider an alternative that would require broker-dealers to expose retail orders to lit markets unless they provide a meaningful level of price improvement for such orders – a simple solution that would accomplish the Commission's aims without forcing the entire industry to construct the artifice of a qualified auction mechanism on top of it. To the extent that broker-dealers choose not to provide meaningful price improvement and retail orders flow to lit venues, the Commission should allow lit venues to innovate their own mechanisms for attracting and interacting with such orders. Such market-based solutions could (but need not) include some form of a retail auction – whether of the same design that the SEC proposes or otherwise – as well as enhanced exchange retail liquidity programs. Time and again, the markets have proven that they can solve problems through innovation if the Commission affords them the necessary flexibility to do so.

Regardless, Nasdaq asks the Commission to proceed cautiously and deliberatively in this area. We urge it to refrain from adopting its Proposal until such time as it adopts and implements its other equity market structure Proposals, which would provide the Commission and the market time and data to study those effects and therefore inform the Commission as to whether, and in what manner, reform of retail order handling is needed. In addition to or in lieu of the above, Nasdaq recommends that the Commission implement the Order Competition Proposal on a pilot basis before mandating it for all segmented orders.

a. <u>More Order Competition and More Diverse Interaction would be Good for Investors</u>

Even though the current market structure often serves retail investors well, we believe that it can serve retail and institutional investors even better. U.S. equity market structure has

evolved over time such that the vast majority of retail orders have become disconnected from diverse interaction and order-by-order competition.[92]

As discussed above, retail order flow has drifted away from exchanges over time due to regulatory disparities between exchanges and other market centers, including the fact that exchanges must quote and trade in increments of one penny, whereas off-exchange market centers are not subject to this provision, and may trade in finer increments.[93] These market centers have far more freedom than exchanges to offer retail investors price improvement when executing retail orders. Likewise, they enjoy far more commercial flexibility in serving retail investors when it comes to the execution prices it can provide.[94] These artificial constraints reduce competition and potentially negatively impact the NBBO.[95]

Although retail investors may receive price or size improvement under the current structure, they do so at the cost of lost opportunities to search for equal – or even better – price or size improvement opportunities that may exist on exchanges or other lit markets, including in hidden orders or in retail price improvement programs. A market structure that works to provide retail investors with "best" executions should not be one that is content with securing good or even great executions when doing so potentially leaves better executions on the table.

The trade-off between market quality and off-exchange trading is notable where the segmentation of "uninformed" retail orders off-exchange leads to more "informed" flow on-exchange. As a result, spreads widen and quoted depth falls to reflect the costs of market making to more informed flow, reducing liquidity for all market participants (including institutional investors).[96] For example, one paper found that a 10 percent rise in "dark" market

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[92] See Order Competition Proposal, supra, note 1, at 178 ("At present, the vast majority of retail orders (over 90% of marketable NMS stock orders) are routed to wholesalers, where they are frequently executed in isolation, on a captive basis. This execution is subject to competitive forces that apply at the level of average execution quality. Execution of these orders is not subject to order-by-order competition that occurs when order interactions are subject to exchange protocols.") (internal citation omitted).

[93] See 17 CFR § 242.612(a).

[94] See Optimize, supra, note 4, at 8 (noting that "off-exchange market centers can segment their customers' orders into different execution channels based on trading objectives and counterparty attributes. But exchanges are restricted from doing the same thing. Exchanges would undoubtedly provide more tailored execution capabilities to their members and participants. But due to current rules, participants can only find these features in off-exchange venues. This results in further fragmentation, as participants in off exchange market centers choose the customers or orders they want to interact with, offer prices better than the NBBO, and earn a higher profit")

[95] See Order Competition Proposal, supra, note 1, at 178.

[96] See Phil Mackintosh, What is Segmentation? (Nov. 4, 2021), https://www.nasdaq.com/articles/what-is-segmentation-2021-11-04.

share led to a 9.2 percent increase in effective spreads market-wide.[97] Another study used data from the SEC's TSP to similarly show the trade-off between market quality and off-exchange trading as an effect of retail segmentation on dark markets.[98] Under the TSP's temporary "trade-at" regime – which essentially restricted internalization for certain NMS securities and required quotes to be displayed – the study saw effective spreads tighten by more than the amount of price improvement retail received as compared to when the TSP ended and markets returned to "normal."[99] In particular, the empirical analysis showed that when internalization increased after the end of the TSP, the average quoted spread widened by about 22 basis points and price improvement deteriorated by 5.3 percent.[100]

Wider-spread securities cost more to trade than tighter-spread securities. For institutional investors, we estimate that every basis point of shortfall – which includes a combination of spread and market impact costs – adds approximately $2.2 billion to trading impact costs.[101] One study shows that spreads would decrease by approximately 25% if retail flow moved to exchanges, and that an additional reduction in spreads would come from reduced information asymmetry.[102]

The effects of the current model are not limited to wider spreads and higher costs for investors. Indeed, as more trading occurs off-exchange, the incentive to display quotes and orders on exchanges falls. This leads to a wider NBBO and increased incentives to trade away from lit markets, which reduces the incentive to display liquidity, and which in turn widens the NBBO further – all creating a self-reinforcing cycle that undermines transparent markets. At some point the NBBO is no longer able to serve as a reliable and representative measure of the best market prices for equity securities. As Nasdaq noted in Optimize, the NBBO is the lynchpin of the U.S. equity markets insofar as investors rely upon it to assess the state of the market for equity securities and to make informed decisions about buying and selling those securities.[103] Likewise, broker-dealers use the NBBO to price their orders, evaluate market quality, and make determinations as to which trading venues would provide their customers with the best available

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97 See Frank Hatheway et al., An Empirical Analysis of Market Segmentation on U.S. Equity Markets (Dec. 2017), https://www.jstor.org/stable/26590485.

98 See Edwin Hu and Dermot Murphy, Competition for Retail Order Flow and Market Quality (Sept. 23, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4070056.

99 Id.

100 Id.

101 See Phil Mackintosh, How Much Does Trading Cost the Buy Side? (Feb. 17, 2022), https://www.nasdaq.com/articles/how-much-does-trading-cost-the-buy-side.

102 See Hitesh Mittal & Kathryn Berkow, The Good, The Bad & The Ugly of Payment for Order Flow (May 3, 2021), https://bestexresearch.com/the-good-the-bad-the-ugly-of-payment-for-order-flow/.

103 See Optimize, supra, note 4.

executions.[104] The weaker the NBBO becomes, the less it is able to reliably support these core market activities for investors and broker-dealers.

b. Qualified Auctions are a Risky Bet to Solve the Problem that the SEC Identifies

Although Nasdaq agrees with the Commission's assessment of the problem, we are concerned that the Commission's proposal to mandate qualified auctions to solve this problem would be a risky bet, given that the effectiveness of this novel approach is speculative at present and its costs would be significant.

Without opining as to whether, and to what extent, qualified auctions would be effective in increasing competition for retail orders, we think it suffices to say that any such effects are not sufficiently understood or assured. Although there are good reasons to be hopeful that qualified auctions would be effective, there are also good reasons for doubt. For example, while auctions are successful in the options context, they may be less so in the equities markets, which are more fragmented and more order-driven than are options markets. Even the Commission itself acknowledges that it does not have enough information at this time to assess whether qualified auctions qualified auctions would achieve their intended effects:

> This might enhance order execution quality for individual and institutional investors as well as improve price discovery. The magnitude of the improvements in order execution quality that individual and institutional investors may experience as a result of this Proposal might be less than indicated for a variety of reasons (though it may also be greater), including the implementation of MDI Rules, the effect of which is not yet in the data. … The Commission acknowledges considerable uncertainty in the costs and benefits of this rule because the Commission cannot predict how different market participants would adjust their practices in response to this rule.[105]

While the benefits of qualified auctions are speculative, the costs are more certain. Market participants would be required to make substantial, and by the SEC's own account, often disruptive changes to account for qualified auctions.[106] Although the Order Competition Proposal is highly prescriptive in its own right, many complex issues would still need to be decided, including, but not limited to, how to implement what may be numerous simultaneous auctions for the same securities over the course of a trading day, as well as how to integrate auctions within existing plans and systems for handling trading halts and pauses, SIP and market data feeds, and order routing functionalities.[107]

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[104] See id.

[105] Order Competition Proposal, supra, note 1, at 203.

[106] See Order Competition Proposal, supra, note 1, at 203 ("The Proposal would likely cause wholesalers and some retail brokers to incur significant adjustment costs to their operations.").

[107] See id. at 204 ("Market participants would also incur compliance costs, such as exchanges and NMS Stock ATSs incurring costs for creating qualified auctions, as well as broker-dealer and trading center compliance costs related to establishing policies and procedures for identifying and handling segmented orders and originating brokers that

Thus, mandatory market-wide imposition of this novel Proposal would be a risky gambit, both for the Commission, and for the markets. If the SEC's bet on qualified auctions turns out to be a bad one in that the concept fails to produce the projected benefits, does so at higher-than-anticipated costs, or has unintended consequences, then the entire market – including retail investors – will be captive to the negative effects. We do not think that this is a bet worth taking.

c. "Meaningful" Price Improvement is an Elegant Alternative

As an alternative to qualified auctions, Nasdaq proposes a simpler, more elegant approach. As Nasdaq first discussed in Optimize,[108] we recommend that the Commission incorporate into its Best Execution Rule the concept of "meaningful" price improvement. Under this proposal, a broker-dealer could only internalize a retail order, consistent with its best execution obligations, if it either: (1) exposes the order in some way to competition on lit markets; or (2) commits to provide the order with "meaningful" price improvement. Of course, the Commission would need to consider carefully what level price improvement should be deemed "meaningful" enough to justify executing a retail order without competition and without it contributing to the NBBO. In this regard, the Commission could consider utilizing its own definition of the concept in the Order Competition Proposal, i.e., an execution that is at or better than the midpoint of the NBBO. However, it may also be reasonable to provide price improvement at another level that is lower than half the spread, and yet substantial enough support competition and positive investor outcomes.[109] This proposed approach could also provide for an exception for larger orders that would exceed the shares available at the NBBO by some minimum threshold, similar to the exception proposed within the Order Competition Rule within proposed Rule 615 for large orders.[110]

This alternative solution would address the Commission's core concerns about order-by-order competition without also forcing market participants to construct qualified auctions to

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submit segmented orders. NMS plans and their participants (including the exchanges and FINRA) would incur compliance costs in order to update the consolidated market data feeds and to broadcast qualified auction messages. FINRA would incur compliance costs to update the ADF and to broadcast qualified auction messages.").

108 See Optimize, supra, note 4.

109 See Order Competition Proposal, supra, note 1, at 156. Proposed Rule 615(b)(3) applies to segmented orders that are executed by a restricted competition trading center at a price that is equal to the NBBO midpoint or more favorable for the segmented order (i.e., the NBBO midpoint or lower for segmented orders to buy or the NBBO midpoint or higher for segmented orders to sell), as determined with reference to the NBBO at the time the segmented order was received by the restricted competition trading center. Additionally, Proposed Rule 615(b)(4) applies to segmented orders that are limit orders with a limit price selected by the customer that is equal to or more favorable for the segmented order than the midpoint of the national best bid and national best offer when the segmented order is received by the restricted competition trading center.

110 See id. at 156. Proposed Rule 615(b)(2) excepts large orders with a market value of at least $200,000 calculated with reference to the NBBO midpoint when the order is received by a restricted competition trading center.

support this competition. Further, this approach would provide a clear metric for investors to measure execution quality and price improvement while achieving the Congressional objectives for a National Market System, as set forth in section 11A of the Exchange Act.[111] Finally, with this approach, investors would be able to benefit from the significant liquidity within the NBBO that exists on exchanges and certain other venues as well as exchange retail price improvement programs,[112] but which is not displayed pursuant to Rule 612.[113]

d. The Commission Should Allow Exchanges and Fair Access Venues to Develop Innovative Mechanisms for Attracting and Interacting with Retail Order Flow

To foster positive outcomes for investors, we recommend that the Commission allow exchanges to develop and deploy creative solutions for attracting and interacting with retail orders that are exposed to competition (subject to the SEC's statutory public comment and approval process). This would allow the Commission to achieve its stated goals, without incurring the collective risks associated with mandated retail auctions, and it could potentially do so at lower costs and with greater effectiveness. Nasdaq believes that where the Commission has embraced competition and innovation, investors have benefitted from reduced prices, increased functionality, and better market experiences, and would do so here. To be clear, some of these market-based solutions could include retail auctions – whether designed as proposed by the SEC or otherwise – but they need not be limited as such. The following are but a few examples of what such market-based solutions could entail.

Exchanges could offer separate auction mechanisms for segmented orders with finer trading increments, but not introduce a requirement for such orders to be exposed exclusively through any particular mechanism. Instead, participants could choose to expose an order on: (1) an open competition trading center's order book; (2) within an auction designed by a market; or (3) within a retail liquidity program where quotes could be fully displayed. This approach would provide open competition trading centers with greater flexibility to design auctions.

Another viable alternative would be for a market to design its own auction. A market could establish mechanisms targeted to order flows not currently available to or attracted by a

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111 See 15 U.S.C. § 78k-1(a)(1)(C). These objectives are: (1) economically efficient execution of securities transactions; (2) fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets; (3) the availability to brokers, dealers, and investors of information with respect to quotations for and transactions in securities; (4) the practicability of brokers executing investors' orders in the best market; and (5) an opportunity, consistent with objectives 1 and 4, for investors' orders to be executed without the participation of a dealer.

112 See Order Competition Proposal, supra, note 1, at 144. Retail liquidity programs ("RLPs") have been granted an exemption from Rule 612 to provide executions in tenths of a penny. These are programs for retail orders seeking liquidity that allow market participants to supply liquidity to such retail orders by submitting non-displayed orders priced at least $0.001 better than the exchange's protected best bid or offer.

113 17 CFR § 242.612.

displayed venue, and it could do this while providing similar protection against adverse selection, opportunities for price improvement, and other benefits that presently make off-exchange trading attractive. For example, a market could elect to adopt a two-sided auction approach to address the concerns surrounding competition that are identified in the Proposal. A two-sided auction has the benefit of a trade-through exception for a stopped order[114] when, at the time of receipt of the order,[115] the trading center had guaranteed an execution at no worse than a specified price. Utilizing the existing stopped order exception would protect against the risk of market movement during the auction while also guaranteeing the execution of the order. With this type of auction, there is potential for price improvement. A two-sided auction would offer the advantages of exposing the order consistent with the SEC's proposal.

As to retail liquidity programs, we ask the Commission to allow exchanges to operate these programs with more flexibility so that they can compete more effectively for retail orders. Exchanges that employ such programs should have exemptions from the minimum quoting rule so that they can accept, rank, and display orders in $0.0010 increments. There are many other aspects of flexibility that should be considered, such as the ability to attribute the originating broker, if not broadly, then at least as to the participant providing the price for that particular order. The SEC should not stand in the way of competitive venues setting up features that would allow for better competition for retail investor orders, including but not limited to better ways to segment retail order flow through better definitions of retail orders as such.

a. Delay Adoption and Implementation of Order Competition Proposal and Proceed with a Pilot Program First

Notwithstanding the above, if the SEC decides to proceed with qualified auctions, we urge it to do so cautiously and methodically. We repeat our mantra once more – even small alterations to the intricate and interwoven fabric of the National Market System, while often well-intended, can have unforeseen and harmful effects. Such risks are heightened where, as here, the proposed changes would be substantial, their full impacts are unknown, their benefits are unproven and yet their costs are significant.

Thus, Nasdaq believes that it would be prudent for the Commission to wait to adopt this Proposal until after it adopts and implements its other similarly far-reaching and consequential Proposals and studies *their* impacts and effectiveness. Indeed, it may be the case that these other Proposals collectively succeed in promoting competition to such an extent that they obviate the

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[114] See Regulation NMS, supra, note 2, at 37527, n.251. ("A stopped order is an order for which a trading center has guaranteed, at the time of order receipt, an execution at a price no worse than a specified price".).

[115] Specifically, the exception applies to the execution by a trading center of a stopped order when the price of the execution of the order was, for a stopped buy order, lower than the national best bid in the security at the time of execution or, for a stopped sell order, higher than the national best offer in the security at the time of execution. To qualify for the exception, the stopped order must be for the account of a customer and the customer must have agreed to the stop price on an order-by-order basis. See Regulation NMS, supra, note 2, at 37528.

need for the introduction of qualified auctions. Alternatively, the data could demonstrate – in ways that are not apparent to the Commission now – that qualified auctions would not achieve their desired effects or that they would have undesirable consequences, such that the Commission might need to modify its approach or abandon the Proposal altogether.

In addition to or in lieu of the above, Nasdaq recommends that the SEC implement the Proposal on a pilot basis before mandating it for all segmented orders. With a pilot, the qualified auction would apply to a subset of securities. We suggest that such a pilot persist for a period of at least eighteen months to obtain adequate data to better inform the market of the impacts and effects of the proposal. A pilot would allow the Commission the ability to methodically weigh the impacts of a qualified auction on various NMS securities prior to subjecting all NMS securities to the auction mechanism. Further, a pilot would afford the Commission, as well as the industry, with an agile process within which to fine-tune the Proposal once it acquired a reasonably sufficient amount of data and understanding of the impacts on various NMS securities.

V. TRANSPARENCY OF EXECUTION INFORMATION ("RULE 605 PROPOSAL")

It has been over 20 years since the SEC adopted Rule 605 as part of Reg. NMS, which requires the public disclosure of execution quality and order routing practices with the intention to allow market participants to compare execution quality across market centers based on standardized metrics.[116] By amending Rule 605,[117] the Rule 605 Proposal[118] would enhance the protections afforded investors through increased transparency of order execution quality and by requiring additional and more valuable information to be made available to investors.

We agree with the Commission that modernization of the Rule 605 reports is long overdue. Nasdaq believes that transparency-based initiatives promote stronger investor protections by informing and empowering investors to make more informed investment and trading decisions. We strongly support the SEC's efforts to augment investor protections through amending existing order execution disclosure rules, which would significantly enhance their usefulness and increase industry transparency. Specifically, it provides broker-dealers and investors with more relevant, comprehensive, and digestible information by which to make best execution determinations and to assess market quality.

We recognize that as an exchange, the burden of compliance with the proposed rules would not fall predominantly on us and, instead, would more directly impact broker-dealers, retail firms, and off-exchange venues. Consequently, we suggest that the SEC listen closely to those most directly affected by the Proposal and give due weight to their comments

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116 See Securities Exchange Act Release No. 43590 (Nov. 17, 2000), 65 FR 75414, 75416 (Dec. 1, 2000) ("Disclosure of Order Execution and Routing Practices").

117 See 17 CFR § 242.605.

118 See Rule 605 Proposal, supra, note 1.

a. Areas of Support

i. *We support expanding the scope of entities covered.*

Nasdaq supports the SEC's proposed expansion of the scope of entities subject to Rule 605. Broker-dealers that are not market centers[119] currently are not required to prepare Rule 605 reports. We agree with the Commission that this limits market participants' ability to assess and compare the execution quality that broker-dealers obtain for their customers. Most importantly, expanding the scope of entities covered by including broker-dealers that exceed a 100,000 customer account threshold would increase transparency by providing customers with data that allows for better direct execution quality comparisons among such broker-dealers.

We believe that the 100,000 customer account threshold, as proposed by the SEC, appears to balance the associated implementation costs on those broker-dealers that may provide the execution quality statistics with the greatest benefit.

ii. *We also support expanding the definition of a "Covered Order."*

Currently, Rule 605 requires market centers that trade NMS securities to publish monthly reports about executed "covered orders."[120] We support the Proposal's inclusion of certain orders submitted outside of regular trading hours[121] within the definition of a Covered Order. This would take into account non-marketable limit orders submitted outside of regular trading hours or at a time when an NBBO is not disseminated if they become executable after the opening or reopening of trading during regular trading hours. The definition of a Covered Order would also include executable orders submitted with stop prices, and non-exempt short sale orders for which a price test restriction under Regulation SHO is not in effect for the security.

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119 Reg NMS defines "market center" to mean any exchange market maker, OTC market maker, ATS, national securities exchange, or national securities association. See 17 CFR § 242.600(b)(46).

120 Reg NMS defines a "covered order" to mean any market order or any limit order (including immediate-or-cancel orders) received by a market center during regular trading hours at a time when a national best bid and national best offer is being disseminated, and, if executed, is executed during regular trading hours, but shall exclude any order for which the customer requests special handling for execution, including, but not limited to, orders to be executed at a market opening price or a market closing price, orders submitted with stop prices, orders to be executed only at their full size, orders to be executed on a particular type of tick or bid, orders submitted on a "not held" basis, orders for other than regular settlement, and orders to be executed at prices unrelated to the market price of the security at the time of execution. See 17 CFR § 242.600(b)(22).

121 "Regular trading hours" is defined as the time between 9:30 a.m. and 4:00 p.m. Eastern Time, or such other time as is set forth in the procedures established pursuant to 17 CFR 242.605(a)(2). See 17 CFR § 242.600(b)(77).

Nasdaq's support echoes Optimize,[122] where we recommended that the SEC expand its definition of Covered Orders so that the execution quality statistics prescribed by Rule 605 become more representative of real-world trading activity. We recommended including odd-lots, as well as short sales, stop orders and premarket orders. As we discuss in greater detail below, we also advocated in Optimize that "rather than bucket covered orders arbitrarily by share size, Nasdaq suggests that the Commission instead bucket data about covered orders by notional value capped at block size. Such a proposal would avoid the drawbacks of the current system while also ensuring that statistics cover most retail trades."[123] We repeat these recommendations here.

iii. *We support the addition of new order type categories.*

The Rule 605 Proposal additionally seeks to create several new order type categories while also replacing several others with new order type categories. Nasdaq supports the Rule 605 Proposal in its efforts to establish a new order type category for marketable immediate-or-cancel orders. Additionally, we support the elimination and replacement of the three current categories for non-marketable limit orders (inside-the-quote limit orders, at-the-quote limit orders, and near-the-quote limit orders) with non-marketable limit orders that become executable, beyond-the-midpoint limit orders and executable orders submitted with stop prices.

We agree with the SEC that these changes to the order type categories would enhance execution quality information within Rule 605 reports and better group comparable orders.

iv. *We support proposed changes to timestamp conventions.*

Nasdaq backs the Rule 605 Proposal's elimination of time-to-execution categories in favor of average time-to-execution, median time-to-execution, and 99th percentile time-to-execution, each as measured in increments of a millisecond or finer and calculated on a share-weighted basis. Rule 605 does not specify a level of granularity currently for the existing time-to-execution statistics,[124] even as these fields are required to be expressed in number of seconds and carried out to one decimal place. We believe that the time of order receipt and execution should be measured in increments of a millisecond or finer, and that realized spread be calculated at both 15 seconds and one minute.

We believe that Rule 605 reports should add metrics like median price improvement, rather than just average price improvement, in conjunction with price and size improvement opportunities that are significant and relevant to best execution decisions. This is consistent with what Nasdaq recommended in its Optimize White Paper.[125] The existing time-to-execution buckets fail to provide meaningful differentiation for market orders and marketable limit orders and typically provide meaningful information only for non-marketable order types.

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[122] See Optimize, supra, note 4.

[123] Id. at 12.

[124] See Rule 605 Proposal, supra, note 1.

[125] Optimize, supra, note 4, at 6, n.7.

We concur with the SEC that requiring average time-to-execution for all order types, as well as statistics that would provide data regarding the distribution of execution times within each order type, would offer more consequential information. These statistics could be used to judge and compare the average time to execution for a particular order type and still provide information about the extent to which outlier values may skew the average.

b. Suggested Improvements to Rule 605 Proposal

i. *Nasdaq recommends bucketing data about covered orders by notional value rather than shares.*

The Proposal modifies order size categories based on round lots (utilizing the new definition of round lot from the MDI rules),[126] instead of specific share quantities, and establishes new order size categories for fractional share, odd-lot, and block orders. Nasdaq acknowledges the benefits of the Proposal over the current order size categories. We suggest, however, that the Commission instead bucket data about covered orders by notional value.

Although bucketing orders by round lots would be an improvement over current bucketing by share size, we believe that bucketing data about covered orders by notional value is preferable. Using notional value bucketing would prove more useful for measuring execution quality as it would avoid the blending of orders with drastically different notional values.

For example, consider an order for 1,000 shares of a $2 security ($2,000 notional value) and an order for 1,000 shares of a $175 security ($175,000 notional value). Under the share size bucket approach or the round lot bucket approach, these two orders would be bucketed together. However, reporting these orders together would not be effective for measuring execution quality because it is not meaningful to aggregate statistics of orders with very different notional values and characteristics (as the statistics would be skewed to reflect the order with higher notional value). Instead, such orders should be evaluated alongside more similar orders. The Proposal to bucket data by round lots is a step in the right direction; however, it still would result in different-sized trades being included in the same bucket, as shown in chart below. This Proposal also would result in higher-value orders that qualify for retail auctions being mixed with orders that do not so qualify (which will affect blended reports at the retail broker level).

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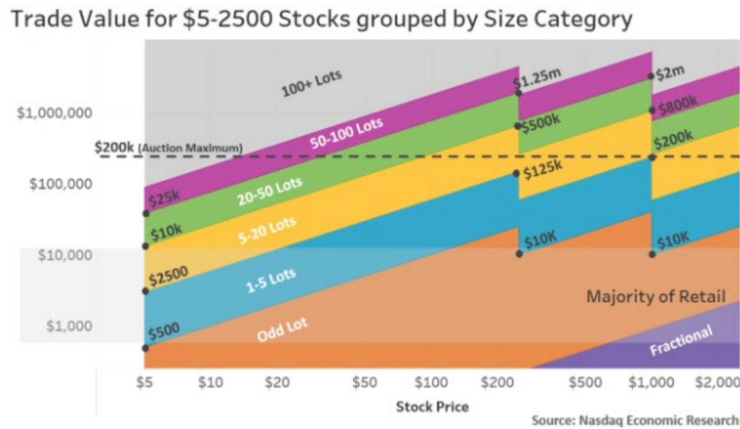
[126] See 17 CFR § 242.600(b)(82).



Nasdaq suggests that the SEC consider the following buckets: less than $10,000, $10,000 to less than $50,000, $50,000 to less than $100,000, $100,000 to less than $200,000, and $200,000 to $400,000. We believe that these buckets are appropriate as they would group orders with similar characteristics and would make it easier to compare execution quality metrics across market centers that trade in differently priced securities. The SEC should consider increasing the current cap of $200,000, as this benchmark has not changed with the market or inflation over time. Further, increasing the cap may provide information that is helpful for institutional buyers.

Using notional value buckets for Rule 605 reporting would facilitate more informed order routing decisions and best executions. Additionally, using notional values in determining bucket sizes would provide for a more future-proof mechanism as markets evolve.

ii. Nasdaq supports centralized publication of 605 Reports.

Nasdaq commends the SEC for proposing human-readable summary execution quality reports, which would improve the usability of information on execution quality by making the data more accessible to a wider audience, including individual investors. We believe it is critical that the SEC requires all firms to use a standard format to facilitate comparisons.

Currently, there is no requirement for Rule 605 reports to be posted in a centralized location, leaving market participants to collect Rule 605 reports in an inefficient and time-consuming manner. By providing centralized access to Rule 605 reports, market participants would be more likely to use the data to compare execution quality, leading to increased competition and improvements in execution quality. We suggest that the SEC require that both summary and detailed reports be posted centrally.

VI. REGULATION BEST EXECUTION

Best execution is an important aspect of modern markets and Nasdaq supports efforts to strengthen best execution rules to the extent it is beneficial to investors, including by extending it to asset classes that lack needed transparency and customer-friendly guidelines. Nasdaq believes it is reasonable for the SEC to seek its own rules in this area to have more direct oversight. However, the Proposal, as written, lacks clarity about the Commission's unique vision for best execution, and we are concerned that its interplay with existing rules will lead to confusion and duplication of efforts. Nasdaq is concerned that rather than driving better outcomes for

investors, the rule may lead to regulation by enforcement. While the SEC is rightfully concerned about ensuring that its Regulation Best Execution adequately protects investors, we think that it can do so while heeding reasonable requests of broker-dealers for fair treatment and efficient regulation.

a. A New SEC Best Execution Rule Could Provide Much-Needed Clarity on Best Execution, but it Fails to Do So in its Current Form

Although a new Regulation Best Execution presents an opportunity for clarity, Nasdaq is concerned that the Proposal fails to take advantage of this opportunity. Instead, the Commission has chosen to structure the Proposed Rule largely as a vague policies and procedures-based rule, similar if not identical to the existing FINRA and MSRB best execution rules in most respects.[127] In replicating the design of the FINRA and MSRB rules, the Commission clearly intends to ensure that its Rule, like existing rules, is flexible enough to adapt to new and changing circumstances. But in replicating the benefits of the FINRA and MSRB rules, the Commission fails to take the opportunity to clarify areas where there may be confusion and potential for violations due to lack of understanding rather than truly harming a customer. The Commission does not state, or provide specific guidance on, which types of trading practices would satisfy its vision of best execution standards, or in the alternative, which types would not satisfy its vision. Moreover, as is discussed below, the Commission is not entirely clear as to whether or how its vision for best execution is distinct from the historical views of FINRA and MSRB. Even in requiring broker-dealers to establish new "heightened" best execution policies and procedures when engaging in so-called "conflicted transactions," the Commission fails to explain what types of procedures would and would not suffice.

In fact, the Commission's Best Ex Proposal is arguably vaguer than existing regimes because the Proposed Rule lacks any accompanying guidance, whereas FINRA and MSRB supplement their rules with interpretive guidance and supplementary materials that address how its members can satisfy their obligations. For example, FINRA's rule identifies five factors that are among those to be considered in determining whether a firm has used "reasonable diligence"[128] and the MSRB rule provides six factors.[129] FINRA also provides eight factors that broker-dealers are permitted to consider in their periodic assessment of execution quality, including whether order routing practices present an opportunity for price improvement, increase execution certainty, and increase the speed of execution. MSRB provides five factors dealers must take into account when assessing execution quality.[130] Additionally, FINRA provides annual guidance to its members on effective practices on how to ensure they continue to meet their duty of best execution, by posing a series of questions and answers in its annual Report on

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[127] See Best Ex Proposal, supra, note 1, at 5441-42.

[128] See FINRA Rule 5310 (a)(1)(A) – (D).

[129] See MSRB Rule G-18(a).

[130] See MSRB Rule G-18, Supplemental Material .08.

FINRA's Examination and Risk Monitoring Program.[131] Proposed Regulation Best Execution, by contrast, fails to provide any specific guidance materials.

Such an approach would be a squandered opportunity for clarity, but more than that, it would leave broker-dealers with little advance notice of what they must do to comply with the new Rule. Thus, the Proposal would put broker-dealers at risk of a "gotcha" enforcement action should the SEC determine, in hindsight, that brokers' policies, procedures, or practices – even if historically permitted under FINRA or MSRB rules – nevertheless violate the SEC's Rule.

b. The Commission Should Take Care to Ensure New Rules Provide Better Outcomes for Investors and Avoid Regulation Through Enforcement

The goal of Regulation Best Execution should be to facilitate better investor outcomes, better broker operation, and broker compliance, rather than merely to generate more enforcement opportunities. Regulation through enforcement is not an appropriate or effective strategy for regulating vague and subjective standards of conduct. If the Commission has a sense of what particular behaviors it does and does not believe are compliant with its Proposed Regulation Best Execution, then the Commission has a responsibility to articulate its views publicly so that broker-dealers have an opportunity to adjust their behaviors accordingly. Broker-dealers should not have to guess what the Commission is thinking, and certainly, they should not be penalized for making a wrong guess due to vague rules.

Nasdaq believes that broker-dealers deserve and would benefit from the Commission providing affirmative guidance on ways in which they may satisfy their obligations under Regulation Best Execution. Such guidance could include a non-exhaustive list of "safe harbors" that describe broker policies, procedures or practices that the SEC believes would be consistent with best execution obligations in circumstances known to be complex, confusing, or controversial, such as when a broker seeks to route a retail order to a trading venue from which it receives a rebate.

With respect to rebates, in particular, which as Nasdaq described above, are essential to the healthy operation of the U.S. equity markets, one such safe harbor could clarify that a broker-dealer would satisfy its obligations, notwithstanding its receipt of exchange rebates, if it discloses the practice of accepting such rebates to its customers and provides customers with an opportunity to opt-out of sending their orders to any exchange that pays their broker rebates. The SEC should also consider adopting safe harbors that clarify other circumstances in which broker-dealers could satisfy their best execution obligations notwithstanding their receipt of exchange rebates. For example, another safe harbor could state that a broker's practice of passing-through exchange rebates to its customers would be adequate to alleviate any need for broker-dealers to maintain "heightened" policies and procedures for so-called "conflicted transactions" in which broker-dealers seek to route orders to exchanges from which they receive

[131] See 2022 Report on FINRA's Examination and Risk Monitoring Program at pp. 42-43, https://www.finra.org/sites/default/files/2022-02/2022-report-finras-examination-risk-monitoring-program.pdf; see also FINRA Regulatory Notice 21-23 (FINRA Reminds Member Firms of Requirements Concerning Best Execution and Payment for Order Flow) (June 23, 2021), https://www.finra.org/rules-guidance/notices/21-23.

rebates. Indeed, this recommendation would be consistent with the Commission's own statement in the NMS Proposal that passing-through exchange rebates to brokers' customers would eliminate the Commission's (misguided) concerns about rebates presenting harmful conflicts-of-interest to brokers.[132]

Additionally, the Commission should consider incorporating into the Rule or publishing as guidance a list of specific factors and metrics that broker-dealers can or must consider when making their best execution determinations. For example, the Commission should consider codifying its non-exhaustive list of quantitative and other relevant factors that it has previously discussed in its Order Execution and Routing Practice Release, which may be relevant to broker-dealers' best execution analysis.[133] For consistency's sake, the list should incorporate the relevant factors that are currently identified in the SROs' best execution rules.[134]

If the Commission, at present, is uncertain about its vision for Regulation Best Execution, then it should set up a process that will help it to solidify its views without unfairly penalizing brokers that act reasonably and in good faith. The SEC could start with reviewing some of FINRA's examination findings to familiarize itself with historical concerns.[135]

Likewise, the Commission should consider imposing a grace period from enforcement actions while it educates itself as to the trading behaviors of broker-dealers for a period of time

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[132] See NMS Proposal, supra, note 1, at 80330 ("Access fees create potential conflicts of interest. Passing on fees and rebates to end customers could eliminate such distortions and lead to improved overall order execution for end customers. Additionally, the ability to pass on the fees and rebates to end customers might also make customers more aware of these fees and rebates so that they can better inform their broker-dealers how to route with respect to fees and rebates which could also lead to better execution for end customers.").

[133] These factors include the (1) size of the order, (2) speed of execution, (3) clearing costs, (4) trading characteristics of the security involved, (5) availability of accurate information affecting choices as to the most favorable market center for execution and the availability of technological aids to process such information, and (6) cost and difficulty associated with achieving an execution in a particular market center. See Securities Exchange Act Release No. 34-43590 (Nov. 17, 2000), 65 FR 75414, 75418 (Dec. 1, 2000); see also Best Execution Proposal, supra, note 1, at 548384.

[134] Additionally, as we discuss above, the SEC should aid brokers' best execution determinations by amending Rule 605 to require reporting of more useful metrics for evaluating execution quality and price improvement opportunities. Rule 605 no longer provides a meaningful and relevant yardstick by which broker-dealers and investors can measure execution quality. If the Commission believes that price improvement opportunities are relevant to best execution decisions, then it should update Rule 605 to capture more relevant and useful data on price and size improvement opportunities and add metrics like median price improvement rather than just average price improvement.

[135] See 2022 Report on FINRA's Examination and Risk Monitoring Program at 44-45; see also Best Execution Proposal, supra, note 1, at 5471-72, n. 210.

(i.e., six months or one year) after adopting Regulation Best Execution. During this grace period, the Commission would refrain from taking enforcement actions against broker-dealers that make good faith and reasonable attempts to demonstrate compliance with Regulation Best Execution. The Commission would also commit to work discretely and collaboratively with such broker-dealers to bring them into compliance during the grace period, including by advising them as to how to modify or correct any of their policies, procedures, and practices that fail to meet the Commission's standards. Meanwhile, those broker dealers that act unreasonably and in bad faith would not be spared from enforcement scrutiny during the grace period. Before ending the grace period and lifting its enforcement moratorium, the Commission could publish a summary of its learnings from that period to serve as yet another compliance tool.

Alternatively, or in addition to the grace period discussed above, the Commission also could establish a no-action letter program that would enable broker-dealers to understand whether actions they contemplate taking in the future would be viewed by the Commission as violating Regulation Best Execution. Broker-dealers that receive no-action letters could proceed with their activities with confidence that the Commission will not take enforcement action against them, at least with respect to the specific scenario that the Commission reviewed. The Commission could, over time, publish periodic summaries of its observations from its no-action letter program to once again facilitate better compliance.

c. The SEC's Proposed Regulation Best Execution Should Supplant the Current SRO Best Ex Regimes

In proposing to adopt Regulation Best Execution, the Commission states that the new Rule would co-exist with existing FINRA and MSRB best execution rules.[136] Specifically, the Commission proposes that Regulation Best Execution would serve as a regulatory floor, and that FINRA and MSRB rules and interpretations would continue to apply to the extent that they are more specific or stringent than the SEC's Rule.[137] Nasdaq disagrees with this approach, as it believes that the goal of Regulation Best Execution should be to enhance the duty of best execution, rather than simply to duplicate (if not triplicate) its administration and enforcement. To avoid undue confusion and costs associated with maintaining three sets of overlapping best execution rules, Nasdaq recommends that the new Proposed Regulation Best Execution incorporate and replace the FINRA and MSRB rules.

Nasdaq is concerned that if the Commission adopts Regulation Best Execution as proposed, the three best execution rules – while largely the same -- will not be entirely aligned. Where the rules differ, confusion may arise as to which rule is operative and prevails in a given circumstance. In certain cases, the SEC rule is more specific or simply different than the FINRA and MSRB rules, and in other cases, the opposite is true. For example, Proposed Rule 1101(c) requires at least quarterly reviews of execution quality of broker-dealer transactions for or with customers or customers of another broker or dealer. In contrast to the SEC's Proposed Rule, the MSRB rule does not require broker-dealers to conduct reviews more frequently than annually.[138]

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136 See Best Ex Proposal, supra, note 1, at 5441, n.3 and 5451.

137 See id. at 5451, n.109.

138 MSRB Rule G-18.

And while FINRA's rule does require a broker-dealer to conduct quarterly reviews of execution quality, such reviews must be conducted on a security-by-security, type-of-order basis (e.g., limit order, market order, and market on open order),[139] whereas the Proposed Rule gives broad discretion and provides less specificity for such reviews.[140] Additionally, Proposed Rule 1101(c) would apply to a broader range of broker-dealers than does the FINRA rule.[141]

Nasdaq is concerned that inconsistencies among the three best execution regimes risk entrapping broker-dealers in "gotcha" enforcement actions, whereby brokers acting in good faith to comply with one regime may be held to run afoul of another regime.

Additionally, Nasdaq believes that requiring broker-dealers to maintain compliance with multiple best execution rules may be overly burdensome, especially where the requirements of the three rules deviate from each other. To avoid confusion and inconsistent interpretations, Nasdaq recommends that the Commission supplant overlapping FINRA and MSRB rules and incorporate them, and their guidance, into Regulation Best Execution and, where necessary, reconcile any conflicting rules and guidance.

d. Nasdaq Supports Expanding the Duty of Best Execution to Asset Classes other than Equities Securities

We support the Proposal to apply the duty of best execution to broker-dealers in all securities, including not only equities, but also options, fixed income and digital assets that are securities or government securities under the Federal securities laws. Expanding the scope of the Proposal beyond equity securities is prudent. Current FINRA and MSRB best execution rules apply to broker-dealers in the options, corporate and municipal bonds, and government securities markets. Therefore, extending the SEC's rule to the same groups should be straightforward.

However, when extending the best execution principles to other securities markets, the SEC should be mindful of the unique characteristics of those markets. The equity market-based principles of best execution may not be appropriate for all asset classes. While mature asset classes such as equities and options have established polices with robust transaction cost analysis for investors to measure performance, Nasdaq believes that the Commission should tread lightly when imposing best execution obligations to participants in nascent asset classes, such as digital assets. The Commission itself acknowledges that it still has limited information about the order handling and best execution practices of broker-dealers that engage in transactions involving

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139 See FINRA Rule 5310, Supplemental Material .09.

140 While review of orders on a security-by-security basis may be much less practical for the options markets, where there may be hundreds of series of options for one underlying security, the Commission should maintain consistency with other SRO rules in the broker-dealer's execution quality review for standard of review.

141 FINRA's execution quality review requirement applies only to broker-dealers that route customer orders to other broker-dealers for execution on an automated, nondiscretionary basis or that internalizes customer order flow. However, proposed Rule 1101(c) would apply to all broker-dealers that are not introducing brokers that transact for or with customers.

digital asset securities.[142] Although we agree that best execution principles could provide welcome protection to digital assets investors, more study is required to determine how to implement those principles effectively and without causing unintended harm to that market.

VII. CONCLUSION

Nasdaq appreciates the Commission's efforts to modernize and enhance U.S. equity market structure for the benefit of retail investors. Although the markets work well already, we agree that opportunities exist to make them work even better, including by helping tick-constrained securities to trade better, increasing competition for retail orders, leveling the competitive playing field among trading venues, enhancing best execution obligations, and supporting the NBBO. And yet, as market structure becomes ever more complex and interconnected, the manner in which we approach reform is increasingly central. We believe that whenever possible, the Commission should act in a cautious, methodical, collaborative and pragmatic fashion, and resist the temptation – however well-intentioned – to do too much, too soon, and without a sound evidentiary footing and a full appreciation for the impacts and consequences of its actions. In certain respects, the Commission's Proposals are consistent with these admonitions, but in others, recalibrations, moderations, and pauses would be prudent to achieve the best results for the markets and investors. Nasdaq stands ready to partner with the Commission, investors, and the industry to ensure that the U.S. equity markets are optimized for retail investors. We look forward to the public debate in the weeks and months to come.

Sincerely,

John A. Zecca

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

[142] See Best Ex Proposal, supra, note 1, at 5448, 5518, n.514.