

Optimizing Markets for Today and Tomorrow:

A Framework for U.S.
Equities Market Reform

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In March 1973, a former Chairman of the U.S. Securities and Exchange Commission (the “Commission”) remarked that the Byzantine state of equity market structure meant that there was “no way that an investor can be certain the investment process is working for him” and “no way he can be sure his interests are being protected all the time.” In response to these concerns, the Commission proposed creating a national market system that would assure public investors that “the markets are working for him – that he has an equal crack at the best available price, no matter where it is being made.”¹

Almost 50 years later, this investor-focused vision remains the North Star for the national market system, and by most measures, U.S. equities markets today embody these principles. Even amidst the significant challenges we’ve faced in the past two years—from extreme volatility during the pandemic to a new wave of retail trading— markets were resilient and functioned well. The rapid pace of technological innovation in the capital markets has only added to a sense that the future of markets is bright.

Yet even as we acknowledge our successes, it is essential that we never rest on our laurels. As technology and market dynamics evolve at breakneck speed, we must remember that what worked yesterday will not necessarily work tomorrow. Investors benefit when regulations are continually modernized to keep pace with the evolution of the economy and technology.

As the operator of many of the world’s largest and most innovative securities exchanges and a leading provider of technology to markets and market participants everywhere,² Nasdaq believes in transparent, fair, efficient, competitive and inclusive markets, and we support regulatory changes that advance those critical goals.³

Nasdaq is committed to leveraging its expertise and experience to foster debate about how best to strengthen equity market structure and serve investors. The discussion must start with the National Best Bid and Offer (the “NBBO”), the

¹ Former SEC Chairman G. Bradford Cook, “The Central Market System: Putting the Markets to Work for the Investor,” March 15, 1973, at <https://www.sec.gov/news/speech/1973/031573cook.pdf>.

² Nasdaq is the leading stock market operator in the world, powering 50 exchanges and providing infrastructure to more than 130 market operators around the world. We play a crucial role in making US capital markets more efficient, helping the US economy to grow, and securing a better financial future for US households. We are the listing market of choice for over 3,700 companies and over 440 ETPs representing market capitalization of more than \$28 trillion. We also provide investors with competitive markets, continuous stock prices and liquidity. Our US markets traded more than \$27 trillion in 2021 across all NMS stocks & ETPs.

³ Most recently, the Administration has emphasized the need for all agencies and Departments to take a “whole-of- government effort to promote competition in the American economy.” In announcing this Executive Order, which specifically singles out “competition in finance” the President stated: “Capitalism without competition isn’t capitalism; it’s exploitation.” Nasdaq agrees that competition in the financial markets is important to drive innovation and value for investors. See Competition in the American Economy (July 9, 2021), at <https://www.white-house.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/>

lynchpin of the U.S. equity markets. Nasdaq and other national securities exchanges are required to continuously produce for public consumption the best available prices for buying and selling equities at any given time, which are then compiled and displayed to all market participants as the NBBO. Investors rely upon the NBBO to provide a single fair, transparent and reliable source upon which they can base their decisions about buying and selling securities; likewise, broker-dealers use the NBBO to price orders and to prove that they have complied with their duty to provide customers with Best Execution. Dark pools and other off-exchange venues also use the NBBO as a reference price for their venues, using it to execute orders and accelerating a shift away from lit public markets.

Despite the fundamental importance of the NBBO, the evolving nature of the equity markets—specifically the ongoing fragmentation of trading—is acting to weaken it. As more trading occurs off-exchanges, a dwindling percentage of orders contribute to the NBBO, thus weakening it as a reliably representative measure of best market prices. Today's NBBO also fails to account for significant activity, such as odd-lots⁴ and actionable indications of interest.

Nasdaq believes we can support stronger and more competitive equities markets by focusing on three key areas:

- Best Execution
- Promoting competition and regulatory parity
- Strengthening the NBBO

Specifically, we believe the following recommendations will achieve our shared vision of preserving some of the strongest equities markets in the world:

1. Promote competition and transparency by harmonizing minimum quoting and trading increments across all markets.
2. Strengthen the NBBO through intelligent ticks, especially for lower-priced “tick constrained” stocks.
3. In conjunction with tick reform, adjust access fee caps and rebates commensurately to promote competition and transparency.
4. Strengthen the NBBO by clarifying that actionable Indications of Interest (“IOIs”) are quotes that should be broadly available to the public.
5. Clarify Best Execution by sourcing inter-NBBO liquidity broadly and providing meaningful price improvement and metrics for measurement.
6. Modernize the reporting and disclosure regime for execution quality statistics to improve transparency.
7. Level the playing field by granting exchanges greater flexibility to offer purpose-built solutions to compete more effectively for all types of order flow from all trading segments.
8. Increase the level of transparency of off-exchange trading to improve investors’ ability to source liquidity and measure performance.
9. Use the revenue from consolidated market data to promote price discovery and strengthen the NBBO.
10. Eliminate the antiquated concepts of “round lots and odd lots” to promote efficiency and transparency.
11. Preserve exchange rebates and other “incentives for good” that promote transparency, liquidity and a stronger NBBO.

The opportunity for fairer markets and better executions for all investors

Nasdaq believes that improvements in these areas are within reach—not through revolutionary or disruptive changes, but through targeted, incremental changes that will invigorate public markets and promote investor interests.

⁴ Odd-lots are stock orders for quantities of shares that are deemed to be too small to be included in the NBBO (even though for small-sized orders in high-priced stocks, odd-lots may represent a large dollar value). Currently, orders must be of at least 100 shares (a “round lot”) to be included in the NBBO.

Do Best Execution standards meet today's market dynamics and adequately ensure that broker-dealers provide investors with the "best" available executions?

The Duty of Best Execution – i.e., the duty of broker-dealers to obtain the best available prices in the markets for their investor clients' orders – is a touchstone of investor protection. As markets evolve, the concept of Best Execution needs to evolve with it. Best Execution is measured with respect to the NBBO, but as discussed above, the NBBO does not adequately account for an increasing array of orders that may be priced better than it but are not displayed on exchanges or the SIP. Thus, strengthening the NBBO is also integral to strengthening the Duty of Best Execution and protecting investors.

Nasdaq believes that the concept of Best Execution, as laid out in the Commission's rules and guidance, can be enhanced to better balance the desire for a strong NBBO and for ample flexibility to ensure investors' trading objectives are met. To deliver the full potential of the markets, Best Execution must be constructed in a way that allows it to keep pace with the changing nature of equity markets. Today's complex and fragmented market environment is much different from the more centralized trading that existed when Best Execution was originally conceived. Today's equity markets feature a large and growing number of exchanges, an increasing level of trades occurring off-exchange (especially as retail participation has increased and constitutes a greater proportion of the overall market), and significant growth of non-displayed orders and sub-penny trading. The Commission needs to account for these new realities when it re-examines what it means to satisfy the Duty of Best Execution.⁵

For example, these changes have led us to question the accuracy of the NBBO, which in turn limits investors' ability to measure and evaluate Best Execution in relation to the NBBO. If the Commission wants to ensure that Best Execution statistics are useful to investors, then it must ensure that guidelines, policies and regulatory structures support an NBBO that is strong, deep and reflective of supply and demand.

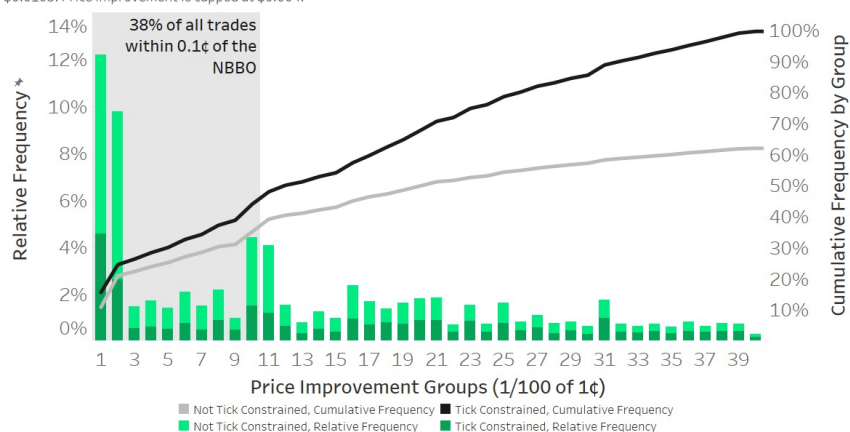
Another element of Best Execution that requires further consideration is the role of price improvement. The Financial Industry Regulatory Authority and the Commission seemingly permit broker-dealers to satisfy their Duty of Best Execution by trading away from the NBBO when price improvement is available to them. But what level of price improvement beyond the NBBO and under what circumstances should the duty of Best Execution be met? As part of its review of Best Execution, the Commission should consider the relationship and tradeoff between price improvement and the collective desire for a stronger NBBO, especially in circumstances where the price improvement would be deemed *de-minimis*.

These questions are important because [data](#) shows that a large percentage of retail orders executed off-exchange receive what is often described as *de-minimis* price improvement in relation to the NBBO. For tick-constrained stocks, 22% of trades improved by no more than two-hundredths of a penny.

Exhibit 1: Around 38% of sub-penny fills are within 1/10th cent of NBBO

Sub-Decimal Price Improvement Trades Count

All securities with average price higher than \$1 from September 1st and September 30th 2021. Sub-decimal trades are market hours, regular and odd-lot trades with sub-decimal pricing identified following Boehmer et al. (2021). The buy/sell indicator of each trade is inferred following Lee & Ready (1991) algorithm. Tick Constrained securities are securities with average bid-ask spread lower than \$0.0105. Price improvement is capped at \$0.004.



⁵ The Commission missed an opportunity to update Best Execution standards when it adopted the Market Data Infrastructure Rule last year. The Commission concluded that depth of book data was essential enough to be included in core data, but it failed to explain how brokers should use that data to provide Best Execution.

Put another way, if an average investor traded stocks in a typical-sized order of 300 shares of a stock priced at \$60 per share— with available price improvement of \$0.0001 per share—they could receive as little as \$0.03 in price improvement on their entire \$18,000 order – an amount that is immaterial to most investors. Should a broker-dealer rely upon the availability of a *de minimis* amount of price improvement to satisfy its Duty of Best Execution when trading off-exchange, particularly where better-priced orders are available on an exchange and could provide five to fifty times the amount of price improvement?

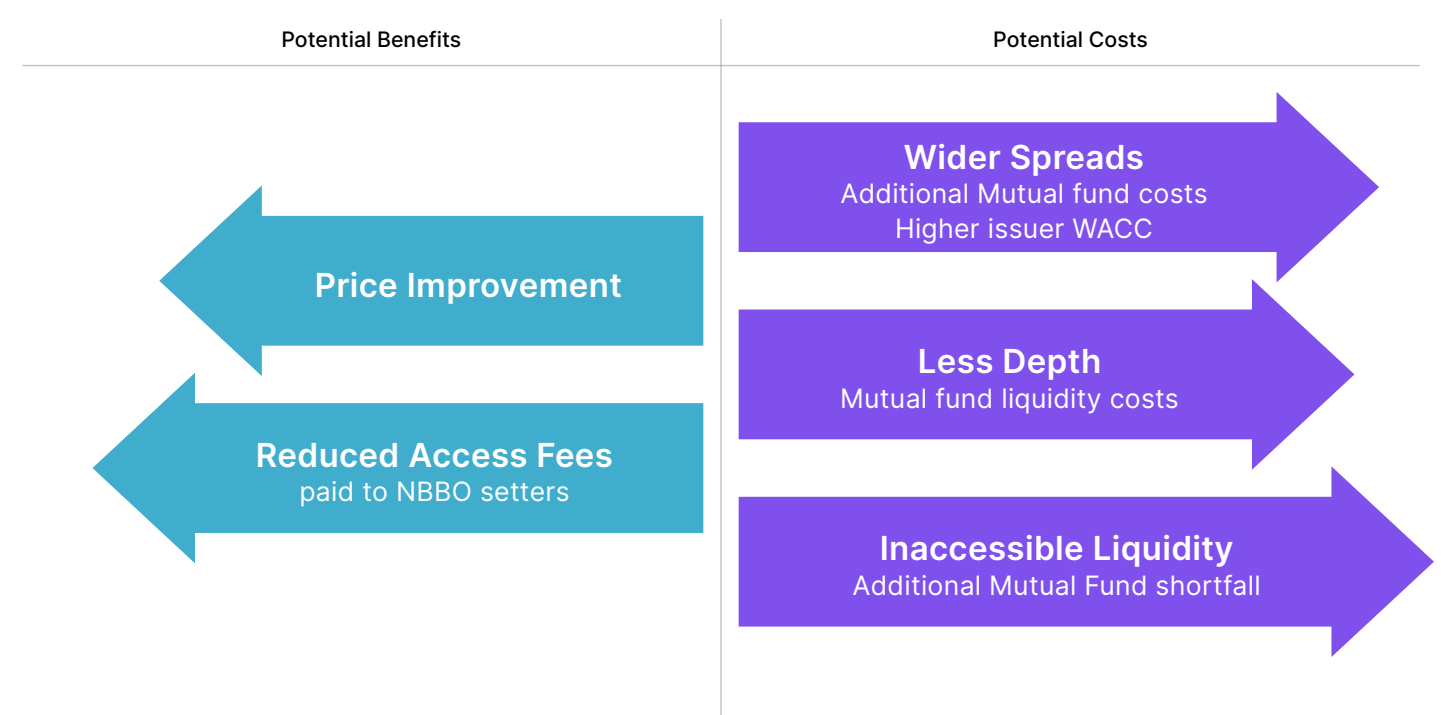
Some argue that price improvement figures—while small for some individual stocks—are greater for others and substantial in the aggregate, amounting to billions of dollars saved for investors. Nasdaq agrees that price improvement often plays a role in facilitating positive outcomes for investors. But we encourage the SEC to consider the economic costs of all externalities.

For example, [BestEx Research](#) estimates that the segmentation of retail investors leads to informed flow toxicity that forces effective spreads 25% wider than they would be otherwise—around the same as the “price improvement” retail receives. Moreover, BestEx concluded that “[r]etail investors end up paying 10% more for their market orders (and mutual funds) pay the new, higher price for the item.” Given their size and estimated trading, it is possible that wider spreads add to as much as \$3.6-6.4 billion in trading costs each year, even after accounting for algorithms that try to capture spreads.

Other research from Wellington⁶ suggests that lit depth at the NBBO is decreasing.

Babelfish and Cowen research also suggests that so-called “inaccessible liquidity” adds between 2-3 times as much in costs to trade the most segmented stocks (those with the highest concentration of volume traded in non-ATS for mutual fund investors). This may result in more than \$5 billion in additional trading costs each year.

Exhibit 2: Weighing costs and benefits of current market structure, which fragments liquidity across many, often segmented and dark, venues



6 <https://www.wellington.com/en/insights/market-liquidity-concerns-causing-fragility-us/>

Existing metrics for measuring execution quality need updating to improve their utility.

The Commission also needs to provide better and clearer metrics for investors to measure execution quality and price improvement. As [others](#) have said, Rule 605 of Regulation NMS no longer provides a meaningful and relevant yardstick by which broker-dealers and investors can measure execution quality.

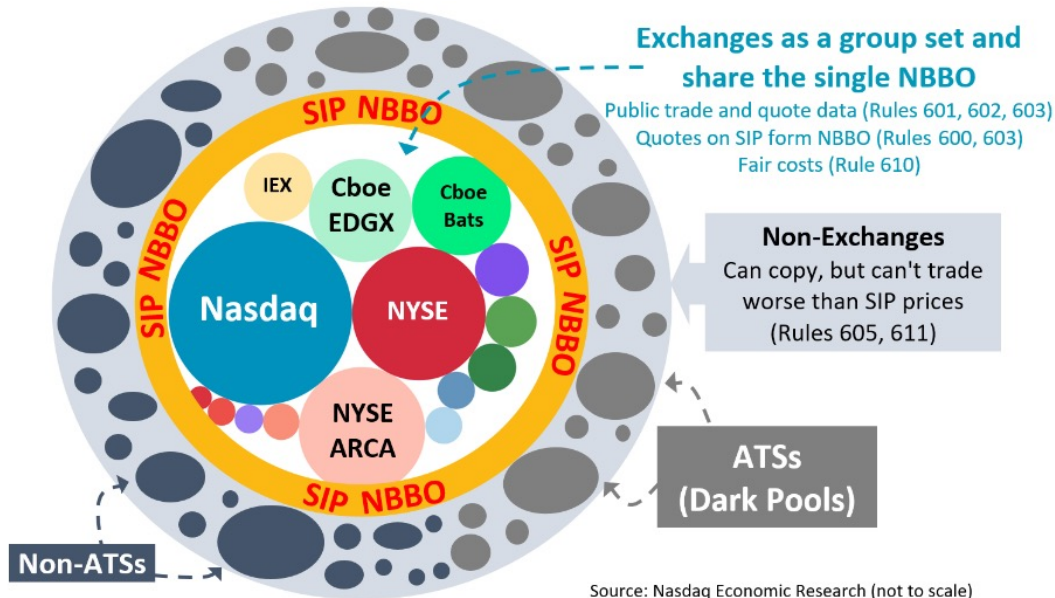
To facilitate quality comparisons, Rule 605 requires market centers that trade national market system stocks to publish monthly reports about executed “covered orders” – including information on execution prices relative to the NBBO, as well as effective spreads, times to execution, mark-outs and other data. However, Rule 600 defines a “covered order” as only including round lot sizes of 100 shares or greater. This fails to capture execution quality data on a substantial proportion of retail orders and orders of high-priced stocks that typically trade in odd-lot sizes of less than 100 shares.

Additionally, Rule 605 may not be designed in a way to give investors a complete view of price improvement relative to the NBBO. For example, the Rule requires market centers to only report on the cumulative number of covered order shares that receive price improvement, as well as the share-weighted average amount of price improvement per share. If the Commission believes that price improvement opportunities are relevant to best execution decisions, then it should capture data on price and size improvement opportunities that are significant and add metrics like median price improvement rather than just average price improvement.

Could regulations be updated to bolster lit markets, competition, innovation and customer choice?

Lit markets are exclusively responsible for supplying the displayed quotes that form the best available price – the NBBO – and enabling investors (and dark markets) to receive the benefit of that price. Lit markets also incentivize market participants to pool displayed liquidity in their markets, which deepens the NBBO and makes it more readily accessible to investors. This also helps to tighten spreads, which reduces transaction costs for investors.

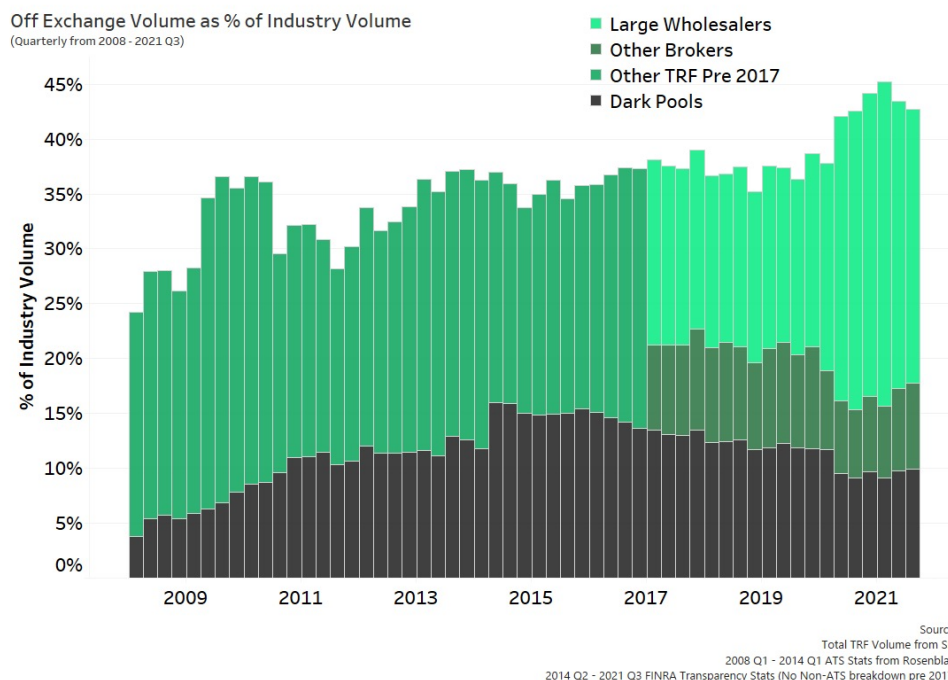
Exhibit 3: The full U.S. Equities Market ecosystem benefits from a robust NBBO - Even those that do not contribute to it



Lit markets perform these vital functions while also being obligated to regulate their own markets and the behavior of their listed companies and members. They are subject to the highest Commission standards for systems security, integrity and resiliency, making the functions they perform safe, reliable and resilient.

In recent years, the ability of lit markets to provide these public goods has come under pressure as U.S. equity trading has continued to shift away from lit markets.

Exhibit 4: Off-Exchange Trading has been increasing, hitting 45% of all shares traded in one month in 2021

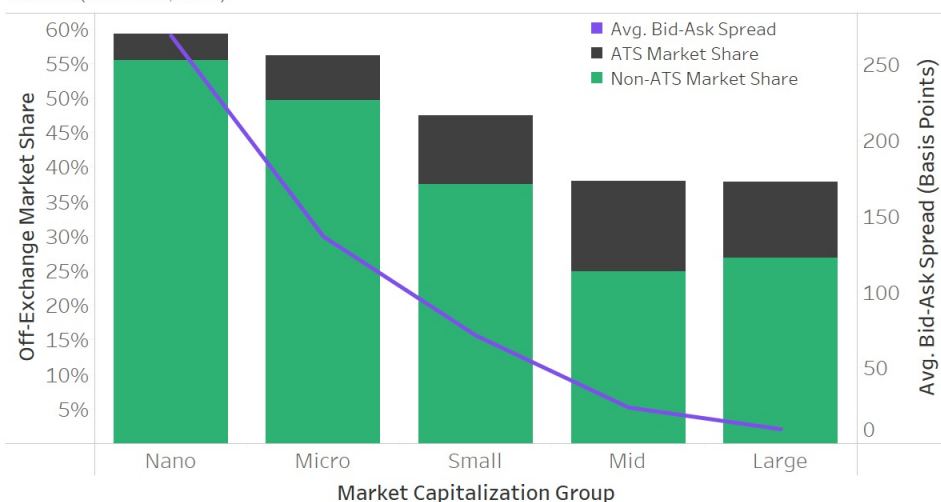


As Commission Chair Gary Gensler has noted, approximately half of all equity trading volume occurred in the dark at certain points last year – an unprecedented figure. And this figure is much **higher** for many individual stocks. As the chart below illustrates, dark market activity accounts for more than 60% of many small-cap stocks trading volumes—with some even approaching 80%.

Exhibit 5: Spreads are Widest in Stocks with the Highest Retail Market Share

Bid-Ask Spread vs Market Capitalization vs Off-Exchange Market Share

SIP and Finra OTC data. Common stocks only from July 1st to December 31st 2021. Average market capitalization groups are: Large (higher than \$10bn); Mid (between \$2bn and \$10bn); Small (between \$300mln and \$2bn); Micro (between \$75mln and \$300mln); and Nano (lower than \$75mln).



Chair Gensler has also correctly observed that this trend toward darkness has been aided by an “unequal playing field when competing for order flow.”⁷ This is the result of dark platforms enjoying far more flexibility than registered national 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 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.

For example, off-exchange market centers⁸ 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 at the expense of the NBBO and the market.

Exhibit 6: The U.S. Stock Market Participants Operate Under Different Rules

	Exchanges	Dark Pools (ATS)	Broker/Dealer (SDP, CRB, OTHER)
Set NBBO	✓	X	X
Fair and equal access	✓	X	X
Provide actionable liquidity	✓	X	✓ (SDP)
Pegs most trades to NBBO prices	X	✓	✓
Sub-decimal trading	Limited	X	✓
Able to target customer segments	Limited	✓	✓
Ability to manage counterparty risk	X	✓	✓
Trading incentives	• Rebates	• Tiers	• PFOF • Sub-penny prices
Regulations	• Exchange Act • SCI	• Reg ATS	• FINRA • Manning 605/606

Does the NBBO require strengthening to provide a complete and accurate representation of the best market prices?

Can the NBBO for a security truly be the best market price if 60% of volume traded occurs off-exchange? In such circumstances, it would be reasonable for investors to conclude that labeling the NBBO as the “best” available market price for that security is false advertising.

The NBBO is also weakening, not only because a shrinking pool of orders comprises it, but also because it is incomplete. That is, it fails to reflect the prevalence of odd-lot orders that are often priced better than the NBBO, particularly for higher-priced stocks that tend to trade in smaller share quantities. There are several securities where the notional value of a round lot is very high, resulting in the protected bid and offer not being reflective of prices for average investors’ trades. For example, a round lot bid for a \$1,000 stock would be \$100,000. When the Order Protection Rule was introduced in 2005, the average price for S&P 500 stocks was less than \$50, making the average protected order value less than \$5,000.⁹ The SEC Market Data Infrastructure Rule that will be implemented in the coming years seeks to solve this challenge by introducing laddered

7 SEC Chairman Gary Gensler, Prepared Remarks at the Global Exchange and Fintech Conference (June 9, 2021), at <https://www.sec.gov/news/speech/gensler-global-exchange-fintech-2021-06-09>. The Commission has taken note of regulatory disparities and their effects on competition in its recent proposal to amend Reg. ATS to apply it to U.S. Treasury trading platforms and communications protocol networks. See Amendments to Exchange Act Rule 3b-16 Regarding the Definition of “Exchange”; Regulation ATS for ATSs That Trade U.S. Government Securities, NMS Stocks, and Other Securities; Regulation SCI for ATSs That Trade U.S. Treasury Securities and Agency Securities, Release No. 34-94062 (January 26, 2022), at 25-26, available at https://www.sec.gov/rules/proposed/2022/34-94062.pdf?utm_medium=email&utm_source=govdelivery (the “Proposed Reg. ATS Amendment Rule”) (proposing to address a “regulatory gap” that exists between unregulated communications protocol networks and regulated exchanges because it “creates disparities that affect competitive balances among like market places for securities.”).

8 Pursuant to Reg. NMS, Rule 600, the term “market center” means “means any exchange market maker, OTC market maker, alternative trading system, national securities exchange, or national securities association.” See 17 CFR 242.600(b)(46).

9 <https://www.sec.gov/rules/proposed/s71004/mrmemo121504.pdf>

round lot sizes. This is a reasonable attempt to fix for marketable depth while including smaller orders. But it is ultimately an [inadequate solution](#), as it is more complex than necessary and actually doesn't fix the odd-lot inside the NBBO problem.

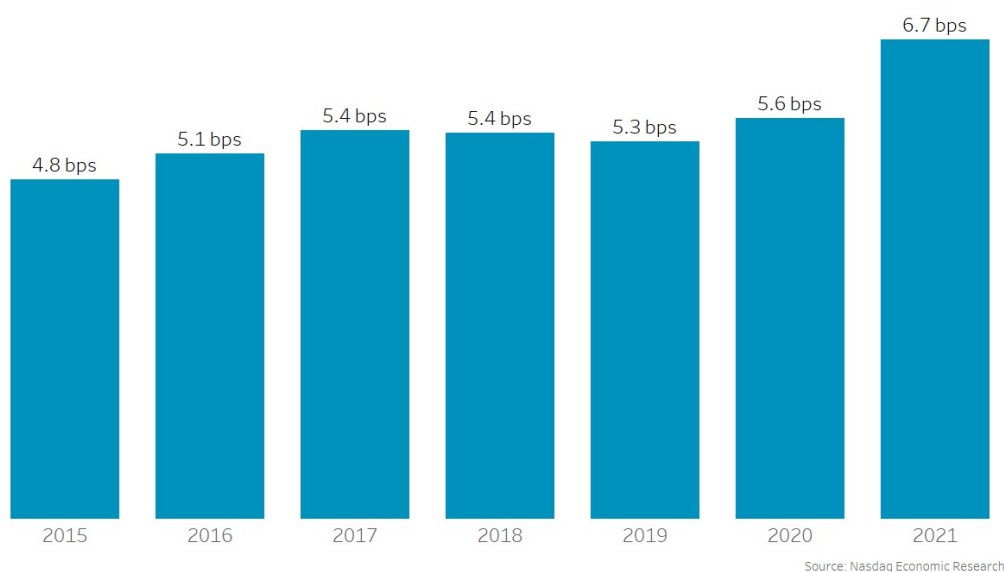
Similarly, the NBBO fails to account for actionable Indications of Interest ("IOIs") that dark markets use to communicate trading interest to market participants but does not fall within the regulatory definition of a "bid" or "offer."¹⁰ Actionable IOIs are firm quotes in all but name. Yet they are not treated as such in the Commission's rules, which require market centers to display bids and offers. As a result, actionable quotes and orders do not contribute to the NBBO.

A narrowly-sourced, shallow and incomplete NBBO is harmful to investors. [Our data](#) suggests that, even as some trading costs, like commissions, have come down, spreads are widening. In fact, they have increased more than 50% on a volatility-adjusted basis over the past seven years.

Exhibit 7: Adjusted for Volatility, Spreads look to be Trending Wider

VIX-Adjusted Average Bid-Ask Spread for S&P500 Components

SIP data from February 2nd 2015 until April 30th 2021. Vix-adjusted spreads are estimated using log-log regression. The dependent variable of the model is the average bid-ask spread in basis points across S&P500 components. The control variables are: year dummy variables, VIX and its squared value.



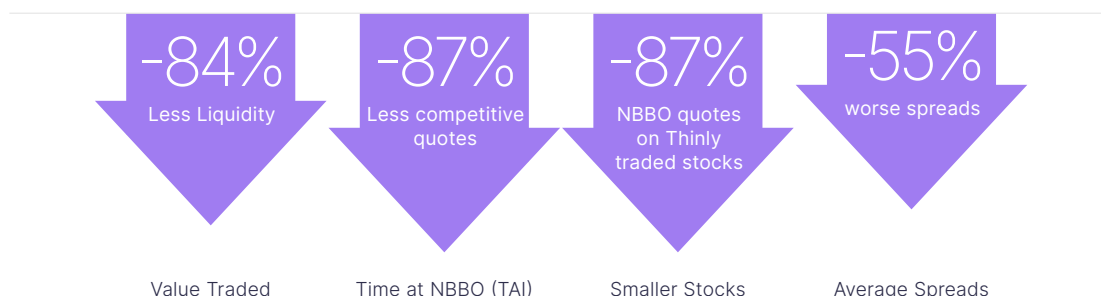
Source: Nasdaq Economic Research (<https://www.nasdaq.com/articles/have-spreads-changed-over-time-2021-10-14>)

Exchange rebates are essential protection against further weakening of the NBBO.

At a time when forces are converging to weaken the NBBO, research demonstrates that exchange rebates and the liquidity gathering activities they incentivize are among the most important and effective tools available to bolster it. Exchange rebates help to keep spreads tight and enhance market quality, benefitting all market participants and investors. Indeed, average spreads on exchanges that offer rebates are significantly less than those that do not.

¹⁰ Pursuant to Reg. NMS, Rule 600, the terms "bid or offer" state expressly they "shall not include indications of interest." See 17 CFR 242.600(b)(11).

Non Maker Taker (Rebate) Markets



Average spreads calculated only when two sided markets exist.

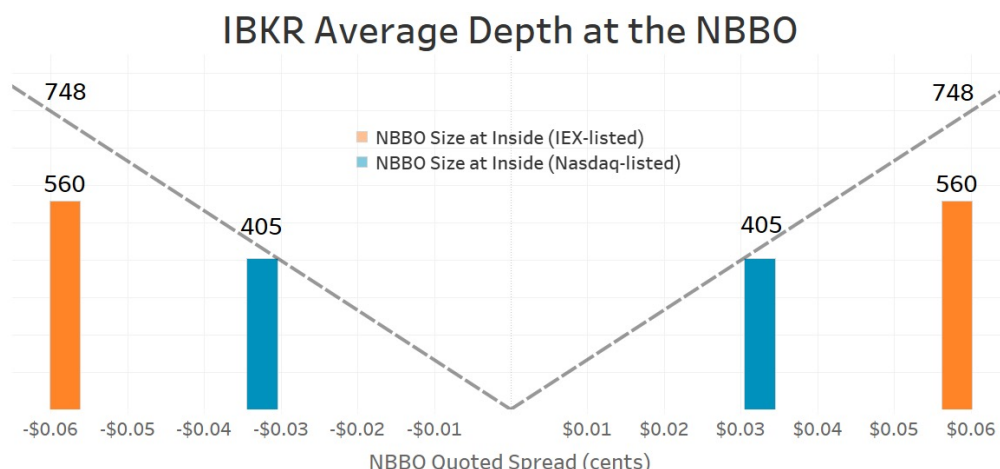
Note: Data from full year 2021 Maker-Taker limited to top 5 exchanges by liquidity. For each specific metric the chart shows the average of the "other" group relative to the maker-taker group. TAI illiquid (Under \$1m/day) vs. liquid (Over \$100m/day) scaled relative to the Maker-Taker TAI average for all stocks.

Moreover, exchanges that offer rebates have two-sided quotes in more stocks, more often, and with more depth than those market centers that do not provide rebates.

As the Commission contemplates how to enhance the NBBO, it should be mindful of the important and productive role that rebates play—as well as the serious consequences that would ensue if they were to be significantly reduced or disappear entirely. Without rebates to attract liquidity to exchanges in a highly fragmented and segmented environment, the ominous trends we describe above are likely to worsen significantly. An even smaller percentage of overall orders would flow onto exchanges, the quality and depth of the NBBO would degrade further, spreads would widen, and costs to investors would increase. Exchanges would also be forced to pursue more speed bumps or other structural liquidity incentives to compensate for the lack of rebates, rendering the markets even more complex and fractured than they are today.

Exhibit 9: IBKR listings switch proved that average spreads and relative depth are better on markets with rebates rewarding lit quotes (blue average depth and price bars)

The listings switch of IBKR from a maker-taker (Nasdaq) to a fee-free speed-bump market (IEX) provided real data into the benefits rebates provider to the market as a whole. By rewarding quote providers, rebates encourage a more competitive NBBO. That's clear in the results, which showed that IEX's spreads were much wider (yellow bars below). Even though their average depth at these wider spreads was slightly higher, when adjusted for spreads, the costs of liquidity were higher than when IBKR traded on the maker-taker market (blue bars).



Source: Nasdaq Economic Research (<https://www.nasdaq.com/articles/whats-fair-it-depends-on-your-point-of-view-2019-10-03>)

Nasdaq urges the Commission to pursue a pragmatic, deliberate, data-driven and collaborative approach to market structure reform

In pursuing market structure reforms that address these issues, the Commission must be sure to act with deliberation and due care. Experience tells us that changing individual elements of today's complex and interconnected market structure can have unintended and harmful consequences. Past attempts at reform suffered when decisions were made without fully understanding the problems trying to be solved or the implications of the proposed solutions. Although Nasdaq agrees that many of the Chair's concerns are well-founded, we urge the Commission to proceed cautiously, incrementally, backed by data, and with due input from all relevant constituencies. Radical change is unnecessary; the least disruptive means necessary to accomplish common goals is preferable.

A measured approach will be especially critical to the success of the Commission's endeavor, given that the issues at hand are inextricably intertwined. Any discussion of the inadequacy of Best Execution standards must be bound up in a discussion about the weakening of the NBBO, which is the price against which Best Execution is measured. Meanwhile, any discussion about the weakening of the NBBO is bound up in a discussion about the erosion of lit markets (whose quotes form the basis of the NBBO) and the regulatory disparities that give rise to such erosion.

Nasdaq doesn't have solutions to every issue, nor do we think that a single silver bullet exists that can solve them all. Solutions must reflect the complexities and the interconnectedness of the problems. We believe that a combination of complementary reforms will be necessary to achieve the Commission's goals. Nasdaq's suggestions include the following:

1. **Harmonize minimum quoting and trading increments across all markets.** The Commission has the tools to allow for dark and lit trading to reach a natural and healthy equilibrium. This equilibrium can be achieved by identifying and reforming those elements of market structure regulation that artificially tilt the balance toward darkness, including regulatory disparities that distort economic incentives in favor of dark venues and preclude exchanges and other execution platforms from innovating under the same guidelines to offer investors choice. To achieve this, the Commission should harmonize minimum quoting and trading increments across all markets.

The 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. More than a third of all off-exchange trades are executed at sub-penny prices that exchanges are not permitted to use. This disparity does not serve the interests of investors or the public and should be remedied by allowing lit venues to quote and trade in the same increments as other venues.¹¹

2. **Strengthen the NBBO through intelligent ticks.** When harmonizing trading increments among exchanges and non-exchanges, the Commission should also consider tick size reform. As Nasdaq has said before, we believe that the existing one penny tick size is inappropriate for all stocks. This is especially true for less liquid stocks, where tick size and round lot constraints lead to artificially wide spreads. Rather than impose the same single tick size for all stocks, Nasdaq continues to believe – as it stated previously in its Total Markets proposal – that tick size should vary based upon price and liquidity levels, particularly for low-priced, tick-constrained stocks. A more flexible tick size regime should consider key variables, such as average daily volume and price. If implemented properly, optimal tick sizes have the potential to increase liquidity, promote quote competition and reduce trading costs – all of which will serve to protect investors by improving market quality. With appropriately-sized ticks, our research suggests that tick size can also encourage a “marketable” amount of depth to accrue at the NBBO while also eliminating round lots. This would ensure that orders accrue at the minimum possible increment while also being a useful trading quantity for average order sizes, at a spread that attracts market makers, and at a minimal cost to investors.

¹¹ Nasdaq notes that the Commission recently proposed a rule to update Regulations ATS by, among other things, expanding the reach of the rule to more execution platforms and amending the criteria for an ATS to be subject to fair access obligations. See Proposed Reg. ATS Amendment Rule, *supra*. Nasdaq is reviewing the SEC proposal on Regulation ATS and will consider submitting a separate comment letter on the proposal in the near future.

3. **In conjunction with tick reform, adjust access fee caps and rebates accordingly.** 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.
4. **Strengthen the NBBO by broadening it to include actionable IOIs.** Another regulatory disparity worth revisiting pertains to actionable IOIs, which are firm quotes in all but name yet are not treated as such in the Commission's rules that require market centers to display orders and grant fair access. The Commission itself raised this issue in 2009 and proposed to address it by amending its regulations to include actionable IOIs within the definition of "bid or offer."¹² The Commission did not act upon the proposal at the time, but it should now be reconsidered as part of its holistic market structure review, especially now that the Commission is also proposing to re-define exchanges to include more platforms that convey trading interest.¹³ As it did in 2009, the Commission should consider targeting this proposal to IOIs that are sufficiently specific in their terms so as to be akin to firm quotes, while excluding IOIs that are mere invitations for negotiation as to potential trade terms. Moreover, the Commission should consider exceptions that preserve investor performance, such as block size discovery mechanisms.
5. **Clarify Best Execution in relation to intra-NBBO liquidity.** Investors would benefit from greater clarity as to when executions inside the NBBO represent Best Execution. Given the Commission's desire to ensure that investors receive "best" executions rather than "better" executions, it should consider enhancing the Duty of Best Execution to include the concept of meaningful price improvement. Further study by the Commission would be necessary to determine what defines "meaningful" price improvement. This would improve investor experience and execution quality while having the additional benefit of strengthening the NBBO.

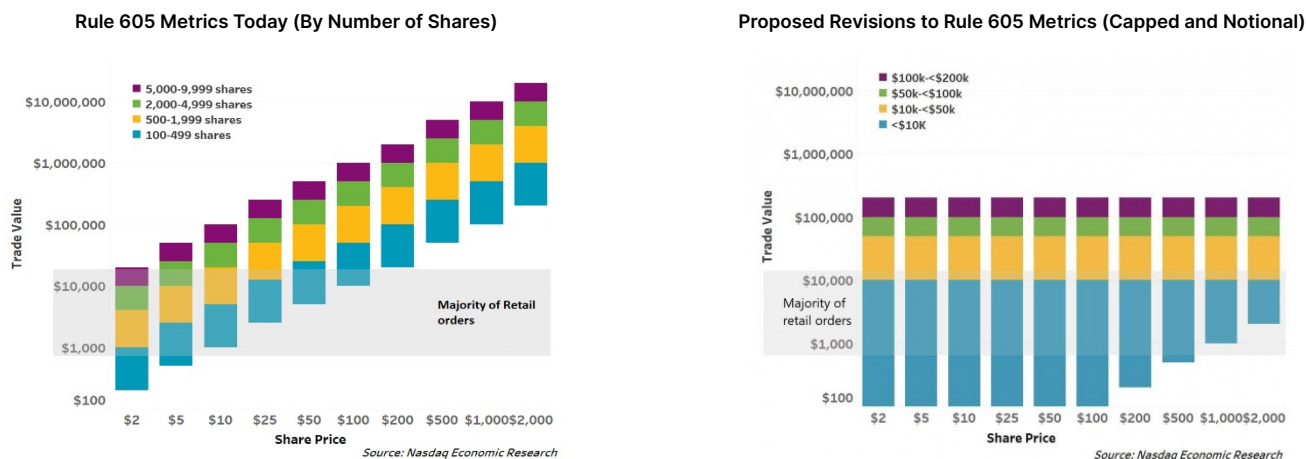
Moreover, Best Ex could require broker-dealers to demonstrate that they have attempted to source and, when available, access the best prices available on all varieties of market centers and for all types of liquidity. This would allow investors to benefit from the significant liquidity within the NBBO that exists on exchanges—but which exchanges are not permitted to display under Rule 612—as well as retail price improvement programs that exchanges offer. Reasonable, limited exceptions would allow for block trading and over-sized orders that demonstrably exceed the shares available at the NBBO or that would lead to market impact costs for the order in question.

6. **Modernize the reporting and disclosure regime for execution quality statistics.** To ensure that investors receive executions that are truly "best," rather than "better," Rule 605 needs to include a broader universe of executions used to determine what is "best." To make the execution quality statistics prescribed by Rule 605 more representative of real-world trading activity, the Commission should expand its definition of covered orders to include odd-lots, as well as short sales, stop orders and premarket orders. Moreover, 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.

¹² <https://www.sec.gov/rules/proposed/2009/34-60997.pdf>

¹³ See Proposed Reg. ATS Amendment Rule, *supra*, at 29-30 ("Amending Exchange Act Rule 3b-16(a) to include non-firm trading interest would eliminate the possibility that systems may offer the use of non-firm trading interest that, in practice, functions as firm orders, so as to avoid exchange registration or complying with Regulation ATS. The Commission believes, however, that the use of firm or non-firm trading interest by a system should no longer be a factor in determining whether a system performs the function of a market place because both firm and non-firm trading interest can be used by a system with the same purpose and effect to bring together buyers and sellers of securities.").

Exhibit 10: Rule 605 execution metrics capture orders from 100 to 9,999 shares which, as prices have risen, no longer reflects the majority of retail orders sizes



7. **Grant exchanges greater flexibility to offer purpose-built solutions.** Off-exchange segmentation currently provides uneven benefits to investors and potentially negative externalities to the NBBO. The Commission should provide exchanges with the regulatory flexibility to compete equally with other market centers for all segments of order flow. Today, exchanges cannot compete effectively to execute trades within the NBBO, essentially foregoing some segments of the markets. The Commission also holds exchanges to high equal access standards, limiting exchanges' ability to offer trading features that are tailored to meet different investors' specific needs. This approach to equal access ignores the reality of competition between exchange and off-exchange execution venues. Given a more level playing field on which to innovate, exchanges could establish mechanisms targeted to order flows not currently available to or attracted by displayed venues. And they could do this while providing similar protection against adverse selection, opportunities for price improvement, and other benefits that presently make off-exchange trading attractive. We encourage the Commission to broaden exchanges' ability to compete more effectively and provide better outcomes for investors. Where the Commission has embraced competition and innovation, investors have benefitted from reduced prices, increased functionality and better market experiences. This is no different.
8. **Attributing OTC trade reports would help investors.** The Commission should consider revisiting an additional recommendation in its 2009 proposals to require disclosure of the identity of ATS's and non-ATS trades on trade reports.¹⁴ As the Commission noted at the time, "[t]he lack of information concerning the ATS on which trades are executed makes it difficult, if not impossible, for the public to assess ATS trading in real-time, and to reliably identify the volume of executions in particular stocks on individual ATSs." "Requiring ATS trades to carry a specific identifier that would be disseminated publicly would equalize the trade reporting requirements for exchanges and ATSs" and would "enable market participants to better assess ... where executions in particular securities are occurring among various ATSs in the over-the-counter market. Finally, such a proposal "should allow more reliable trading volume statistics to be calculated for individual ATSs, ... [which] should enhance the ability of broker-dealers and their customers to more effectively find liquidity and achieve best execution in the over-the-counter market."¹⁵ In advocating for this reform, Nasdaq recognizes the need to accommodate legitimate concerns about the appropriate timing and granularity of attribution (such as real-time versus delayed attribution, attribution by market category or name, and minimum thresholds for illiquid stocks), as well as any exceptions for block-sized transactions to avoid information leakage that would otherwise impact execution quality.
9. **Use the SIP revenue formulas to promote price discovery and strengthen the NBBO.** The current securities information processors' ("SIPs") revenue sharing formulas could be further optimized to support a strong NBBO. The current split between quotes and trades assumes an equal contribution to price discovery. Nasdaq believes trades

¹⁴ See n.11, supra.

¹⁵ Id.

resulting from displayed markets contribute more to price discovery and the formation of the NBBO - both of which are public goods. The SIP revenue sharing formulas should be evaluated to ensure that they reward those orders that contribute most to price discovery and the NBBO. The Commission should also consider how to better incentivize quotes that result in trades, given their ability to drive market quality.

- 10. Eliminate the antiquated concepts of “round lots and odd lots.”** If the Commission proceeds to adopt appropriately-sized ticks, harmonize tick and trade sizes, and provide a more meaningful yardstick for what constitutes price improvement, then the concepts of “round lots” and “odd lots” would no longer be necessary. Adjusted tick sizes will foster spreads where economically meaningful bids and offers will accumulate regardless of round lot size. Tick and trade size harmonization combined with meaningful price improvement will further incentivize competition at the newly adjusted tick sizes. The “round lot” concept is a vestige of a bygone era in which markets were floor-based and operated manually. It’s time for the industry to work together to ensure that market structure catches up with modern, electronic markets by eliminating “round lots” entirely.

Again, Nasdaq believes that a combination of the above proposals, rather than any one of them individually, will be needed to achieve the Commission’s objectives for reform, although something less than all of them may be adequate. That said, there is much room for debate as to what combination of reforms would be appropriate and achievable.

Areas of caution in the pursuit of market structure reform

In addition to that which Nasdaq believes the Commission should do to improve and enhance market structure for the benefit of investors, there are several areas where the Commission should exercise caution. These include the following:

- 1. Respect the legitimate needs of investors to use non-displayed orders to meet their varied trading objectives.**
The Commission should heed lessons from the MiFID II experience in Europe and resist the temptation to reestablish balance between lit and dark markets by imposing coarse caps or blunt restrictions on dark trading. The European experience demonstrates that such approaches are complex, difficult to calibrate properly and tough to administer effectively. Moreover, they only serve to eliminate flexibility for market participants that need or prefer to trade in the dark for valid reasons, including to facilitate block trading and to trade at the midpoint of the NBBO. Reform should be about creating better choices for market participants that improve market efficiency and support transparent price discovery—not about limiting their flexibility.
- 2. Avoid bans and preserve “incentives for good.”** To the extent that the Commission believes market structure reform is needed to address conflicts of interest, the Commission must avoid resorting to bans or other harsh restrictions, which can have unintended, costly and disruptive consequences. Increased transparency and other less drastic measures would suffice to manage those conflicts. The Commission should also recognize that not all incentives are either uniform in purpose or effect. Indeed, many exchange rebates are expressly aimed at improving markets and strengthening the NBBO. Exchanges employ incentive programs to facilitate market-making, encourage quoting stocks at the NBBO for a significant portion of the trading day, bolster trading in illiquid stocks, spur adoption of new and transformative products, and benefit retail investors. Any Commission proposal to restrict broker incentives should carve out such “incentives for good” and focus instead only on those incentives that present real and inextricable conflicts of interest that are harmful to investors in their net effects.
- 3. Competing consolidators will undermine rather than strengthen the NBBO.** We agree with the Commission that a strong and inclusive NBBO is critical to price discovery and the operation of a national market system that works for investors. If its aim is to bolster the NBBO as the investor’s gold standard for the best available market prices, then the Commission should not proceed with its current plan to revamp market data infrastructure by replacing the exclusive SIPs—which currently calculate a single NBBO for each NMS security—with a system of competing consolidators that each calculate their own separate best bids and offers for those securities. More than ever, particularly given the interwoven nature of the equities, options and futures markets, the industry needs to be able to rely upon a “single source of truth” for the NBBO. With multiple consolidators, we risk having different NBBOs

at any given moment due to latency and capacity differences from different consolidators, which will make it even harder for the industry to rely upon the NBBO for best execution and other key performance measures. As the Commission contemplates holistic market structure reforms, it should, at the very least, pause its plans for competing consolidators to determine whether they are compatible with its reform objectives and vision for the markets.

Conclusion

The issues that Chair Gensler and the Commission raise are challenging, with a diverse array of vested interests likely to have conflicting views on what's best for the markets. Finding solutions that are elegant, effective and acceptable to all will be a difficult task. Nevertheless, it is our charge, as stewards of the public markets, to do what is required to make them work for the benefit of the investors whose futures depend upon it. Nasdaq stands ready to work with Chair Gensler, the Commission, and the industry in this important endeavor. We look forward to contributing ideas and data that will facilitate a deliberate, methodical, collaborative, and spirited debate. Let us seize this opportunity to create holistic reforms that produce a healthy equilibrium between lit and dark markets, preserve and strengthen the NBBO, provide better assurance of best executions for investors, and set the markets on a continued path towards excellence.