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November 9, 2018

Via Email & FedEx

Mr. Brent J. Fields
Secretary
U.S. Securities and Exchange Commission
100 F Street NE
Washington, D.C. 20549

Re: Transaction Fee Pilot for NMS Stocks, Securities Exchange Act Release No. 82873 (March 14, 2018), 83 FR 13008 (March 26, 2018) (File No. S7-05-18) (the "Pilot")

Dear Mr. Fields:

NYSE Group¹ appreciates the opportunity to submit to the comment file for the proposed Transaction Fee Pilot two relevant blog postings: (1) "Transaction Fee Pilot: Fee Pilot Round 2" ("Round 2"), which is a follow-up posting to "Transaction Fee Pilot: An Impact Assessment" (the "Impact Analysis") regarding how investors would potentially bear increased costs as a result of the Pilot; and (2) "Credit to Those In the Arena: Enhanced Quoted Spread" (the "EQS Post")," regarding the importance of pricing incentives to the quality and reliability of displayed quotations.²

Given the importance of the Pilot, in Round 2, we amplified our Impact Analysis as follows:

- Provided additional detail of calculations that informed NYSE Group's Impact Analysis;
- Included a sensitivity analysis, which indicates that substantial costs would still be borne by investors under the Pilot even if NYSE Group's underlying assumptions prove too aggressive; and

¹ NYSE Group submits this letter on behalf of New York Stock Exchange LLC, NYSE Arca, Inc., NYSE American LLC, NYSE National, Inc. and the Chicago Stock Exchange, Inc. NYSE Group previously submitted comment letters expressing opposition to the Pilot in its current form. See Letters from Elizabeth K. King, General Counsel and Corporate Secretary, NYSE Group, to Mr. Brent J. Fields, Secretary, Securities and Exchange Commission, dated May 31, 2018 and June 10, 2018.

² See NYSE, Transaction Fee Pilot: Fee Pilot Round 2 (July 10, 2018) and NYSE, Credit to Those In the Arena: Enhanced Quoted Spread (October 29, 2018) (both attached). See also NYSE, Transaction Fee Pilot: An Impact Assessment (May 25, 2018) ("Impact Analysis") (estimating that annual trading costs to investors would increase by at least \$1 billion per year during the course of the Pilot as a result of widening quote widths). All three blog posts are available at: <https://www.nyse.com/equities-insights>. A hard copy of the Impact Analysis is also attached to NYSE Group's May 31st comment letter (see *id.*).

- Created an interactive model (available at: <https://www.nyse.com/equities-insights>), which enables readers to input their own assumptions related to venue and liquidity type distributions and reach their own conclusions about the Pilot and its potential impact to their own trading.

The EQS Post highlights that pricing incentives contribute positively to both the quality and reliability of displayed quotations. Although approximately 40% of trading activity occurs off-exchange, quoted prices from exchanges still inform transaction pricing. The EQS, which is a metric (similar to the average quoted spread) for determining the quality and quantity of quotes contributing to the NBBO, indicates that contributions to price formation vary widely among exchanges. In particular, maker/taker venues consistently outperform other venue types in both average quoted spread and in the EQS measure. This supports the notion that under today's market structure, such pricing incentives enhance the quality and reliability of display markets.

NYSE Group notes that this would not be the first time a pilot has resulted in additional costs to investors. The Tick-Size Pilot Program,³ which only applied to 1,200 lightly-traded securities over a two-year period, is estimated to have cost investors over \$300 -- and up to \$900 -- million.⁴ Given that the Transaction Fee Pilot would apply to 3,000 securities, many of which are actively-traded, the NYSE Group's \$1 billion estimate of the annual cost of the Pilot to investors is hardly unreasonable.

Moreover, NYSE Group joins Nasdaq, Inc. in its position that the Commission should assess the impact of the recently amended Regulation ATS ("Reg ATS Amendments") before moving forward with the Pilot.⁵ The Reg ATS Amendments are designed to address potential conflicts of interest experienced by broker dealers that operate or route orders to Alternative Trading Systems by requiring the potential conflicted party to disclose information that could lead investors to use or avoid those venues, including their fees and rebates, thereby increasing transparency for the consumer.

Similarly, the Commission should assess the impact of the recent amendments to Rule 606 of Regulation NMS ("Rule 606 Amendments") that require broker-dealers to, among other things, provide customers with information about the average rebates the broker received from, and fees the broker paid to, trading venues. Because the Reg ATS Amendments and Rule 606 Amendments address the very conflicts that the Commission claims that the Pilot would also study, NYSE Group believes that the enhanced disclosures required by both the Reg ATS Amendments and Rule 606 Amendments

³ See Securities Exchange Act Release No. 74892 (May 6, 2015), 80 FR 27514 (May 13, 2015) (File No. 4-657) (order approving the Tick-Size Pilot).

⁴ See Tick Pilot Size, Pragma, September 2018, available at: <https://www.pragmatrading.com/resource/tick-size-pilot/> (estimating the cost of the pilot to investors at up to \$350 million); Congress' Failed Stock Market Experiment Cost Investors \$900 Million, Bill Alpert, Barrons, available at: <https://www.barrons.com/articles/sec-tick-size-pilot-program-1536961160> (estimating the cost of the pilot to investors at up to \$900 million).

⁵ See Letter from Jeffrey S. Davis, Deputy General Counsel and Corporate Secretary, NYSE Group, to Mr. Brent J. Fields, Secretary, Securities and Exchange Commission, dated August 31, 2018.

Mr. Brent J. Fields

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would obviate the need for the Pilot, which as noted above, would likely cause significant investor harm.

Respectfully submitted,

A handwritten signature in blue ink that reads "Elizabeth K. King". The signature is fluid and cursive, with "Elizabeth" on top and "K. King" below it.

Elizabeth K. King

cc: Honorable Jay Clayton, Chairman
Honorable Kara M. Stein, Commissioner
Honorable Robert J. Jackson, Jr., Commissioner
Honorable Hester M. Peirce, Commissioner
Honorable Elad L. Roisman, Commissioner
Brett Redfearn, Director, Division of Trading and Markets

July 10, 2018

Fee Pilot Round 2

Our previous post highlighted how end investors could potentially bear increased costs as a result of the SEC's proposed Transaction Fee Pilot. As we expected, the post triggered a significant amount of public debate, as well as discussion between the Exchange and members of the buy and sell-side. This is an important topic worthy of discussion.

This follow-up post provides additional detail of our original calculations. We have also prepared a sensitivity analysis highlighting that substantial costs would remain for investors even if our reasonable assumptions prove, in practice, to be either too aggressive or conservative. Finally, in the interest of inviting parties to reach their own conclusions, we have created an interactive model that enables readers to input their own assumptions related to venue and liquidity type distributions. By providing their own data, readers can see the resulting estimated impact.

Key Points of the Original Analysis

- The original analysis considered the fee pilot's impact on **liquidity-taking** flow because:
 - Institutional and retail investors take liquidity more than they provide liquidity;
 - These investors generally pay fixed commissions and likely will not receive the benefit of lower exchange fees and, therefore, will bear the cost of wider spreads; and
 - Investors providing liquidity may benefit from the wider spread by (1) posting at less aggressive prices if they join the (now wider) NBBO, or (2) seizing opportunities to set a tighter NBBO with less competition from market makers. In either case, we anticipate these are relatively weak effects, and it's important to note they are in conflict with one another.
- We assume that a reduction in access fees would result in a corresponding reduction in rebates.
- Rather than attempt to quantify the impact of the pilot for each bucket, we used a weighted average fee/rebate reduction based on the total number of stocks that would be impacted by the pilot.
 - This approach yields an average fee/rebate reduction of 8.2 mills across all stocks.
 - The fee/rebate reduction across just the 3,000 pilot securities will be substantially higher, but given that we do not know which securities will be included it is appropriate to apply the lower average reduction across the broader universe.
- We then use this value to 1) estimate the change in spreads, and 2) estimate the additional cost borne by liquidity-taking flow.
- We assume that the change in spreads applies market-wide, including to non-maker/taker venues on the basis that maker/taker exchanges drive the inside quote far more frequently than taker/maker or flat fee exchanges
- The cost calculation measures the change in cost to take liquidity, using the midpoint of the spread as the benchmark price.
 - The calculation charges 100% of the higher spread cost to the (conservatively) estimated share of agency-taking volume.
 - Our assumptions in this scenario are as follows:
 - Agency Share (based on NYSE Arca taking volume) is 49%
 - Maker/Taker Venue Share is 52%
 - Market average daily volume ("ADV") is 7.2 billion shares; average notional value is \$368.7 billion
 - Change in spread is 0.32bps
 - Principal taking volume is charged the higher spread cost, less the reduction in access fees.
 - Agency Cost:

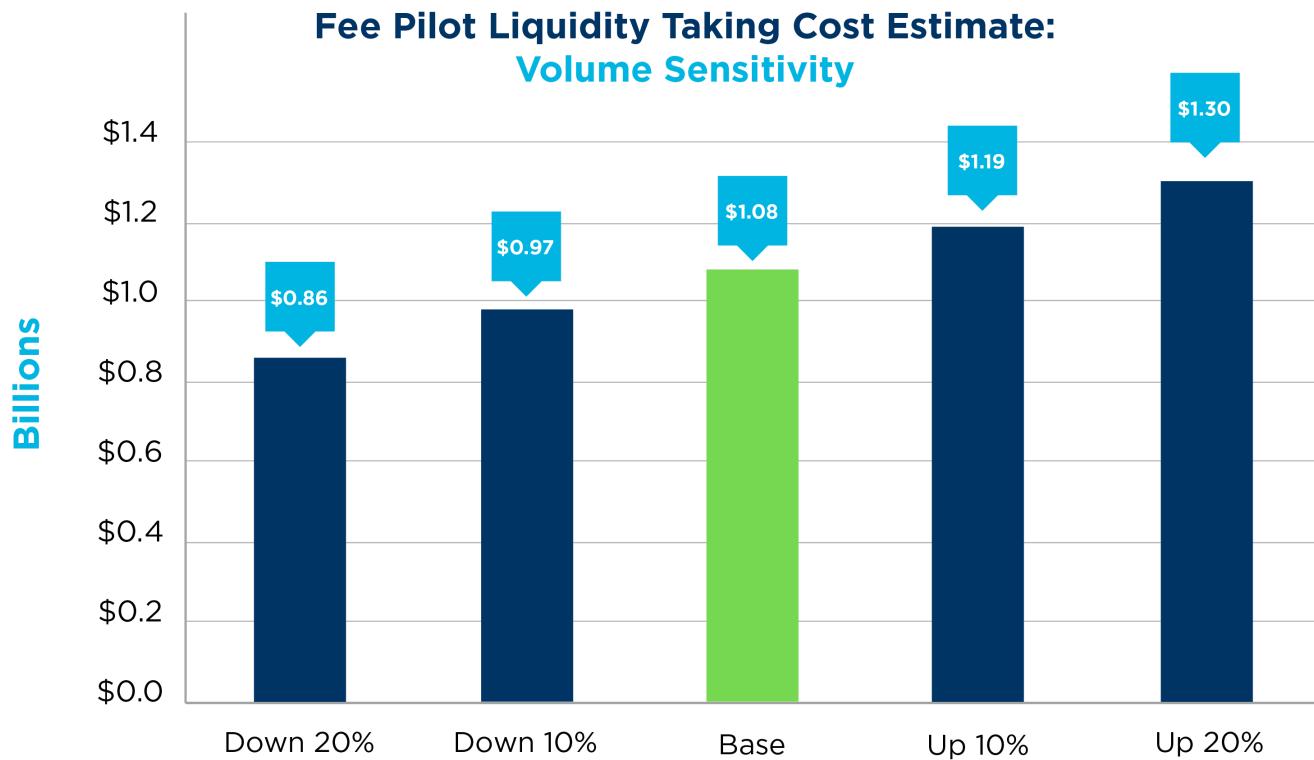
$$\text{Change in Spread} \times \frac{1}{2} \times \text{Market Notional Value} \times \text{Agency Share}$$
 - Principal Cost:

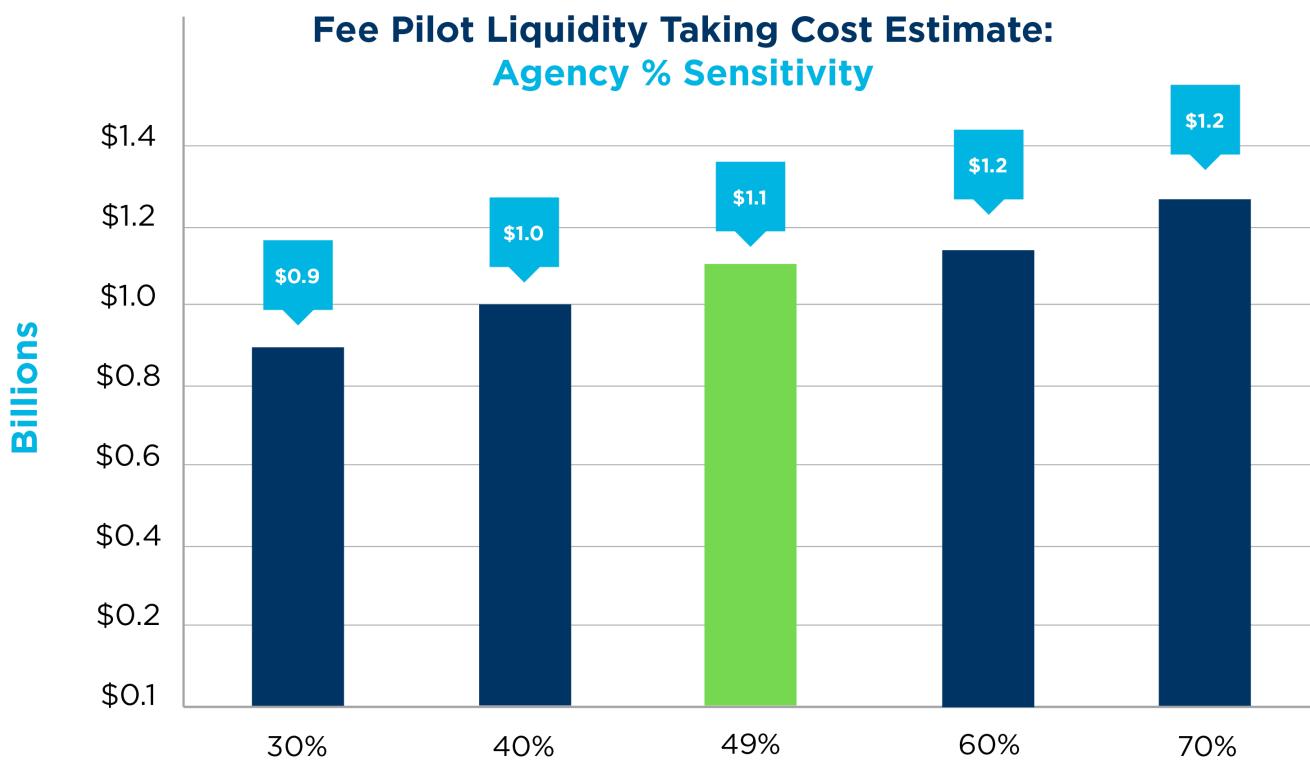
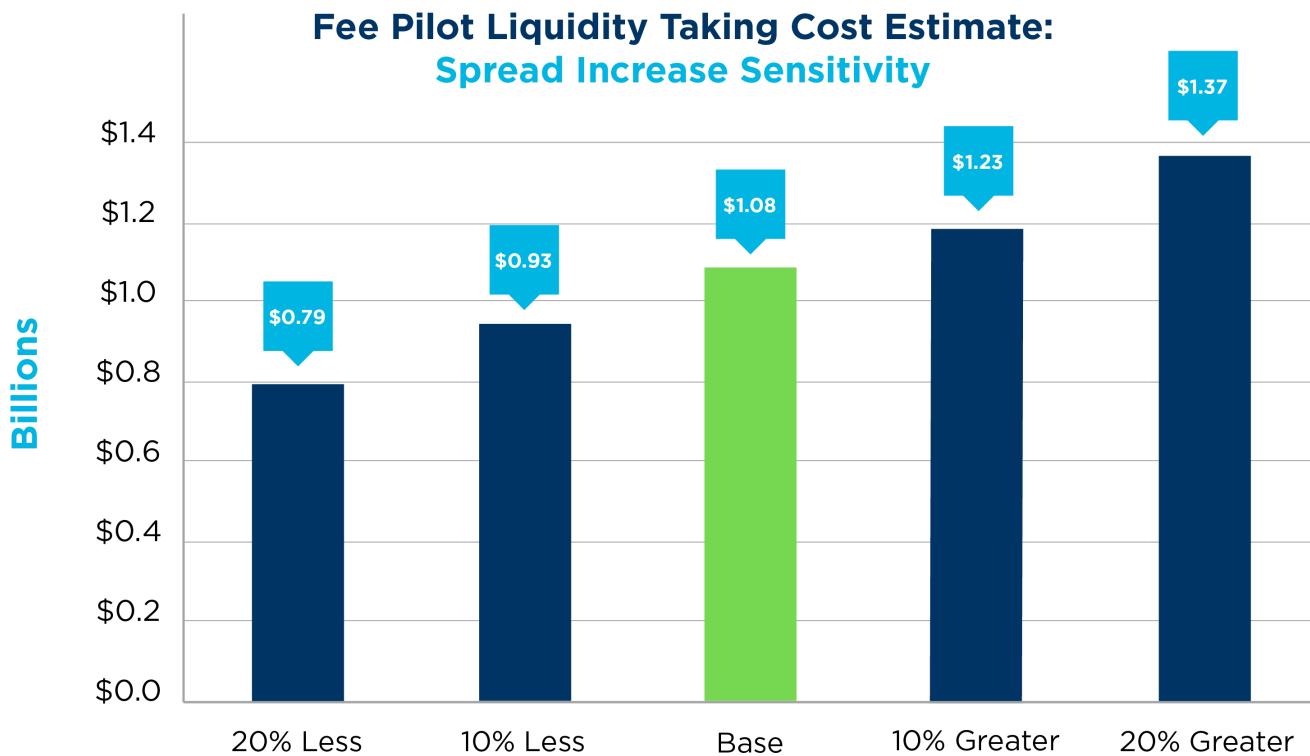
$$[\text{Change in Spread} \times \frac{1}{2} \times \text{Market Notional Value} \times \text{Principal Share}] - [\text{Fee Reduction} \times \text{Market Volume} \times \text{Principal Share} \times \text{Maker/Taker Venue Share}]$$

Sensitivity Analysis

- Our volume assumption used a year-to-date ADV at the time of the analysis.
- We tested the model by increasing and decreasing the volume figure by up to 20%.
 - This accommodates the observation that some market activity may not be directly impacted by wider spreads, such as auction volume and midpoint volume.
- Decreasing the volume assumption by 20% results in a cost of ~\$0.86 billion, compared to the ~\$1.08 billion original estimate.

- The impact estimate is more sensitive to spread changes than volume changes:
 - If we over-estimated the spread increase by 20%, our cost estimate would be \$0.79 billion compared to the ~\$1.08 billion original estimate.
 - Conversely, if spreads widen more than we anticipate, costs will increase.
- While we feel that our agency share of volume was appropriately conservative, the impact estimate shows relatively little sensitivity to this metric.





Interactive Model

As noted in our introduction, we are providing a spreadsheet that enables users to input their own assumptions so they can arrive at an estimated annual impact from their firm's own data. The model includes a robust set of venue and liquidity action variables, enabling users to customize volume mixes for variables such as add/take, standard/inverted/dark venues, etc. We also include a Yes/No variable for cost-plus or pass-through pricing models. Many of the questions generated by our initial post related to volume and activity assumptions, and we expect that this model will enable readers to review their own activity distribution and see the resulting impact estimate.

[Download the Interactive Model](#)

Conclusion

We consider the substantial debate around our original post a welcome outcome. We achieved our goal of encouraging discussion of the possible impacts of the SEC's proposed Transaction Fee Pilot. We hope that future commentators will attempt to include substantive and quantifiable data in support of their stance, as we have tried to do here. We welcome feedback and continue to believe that the proposal will result in increased costs to investors due to wider spreads. We agree with the general view of many who have commented that no one can precisely predict the future and that several assumptions are required to model the possible results of the pilot. In our view, we believe that costs for end investors to take liquidity will rise.

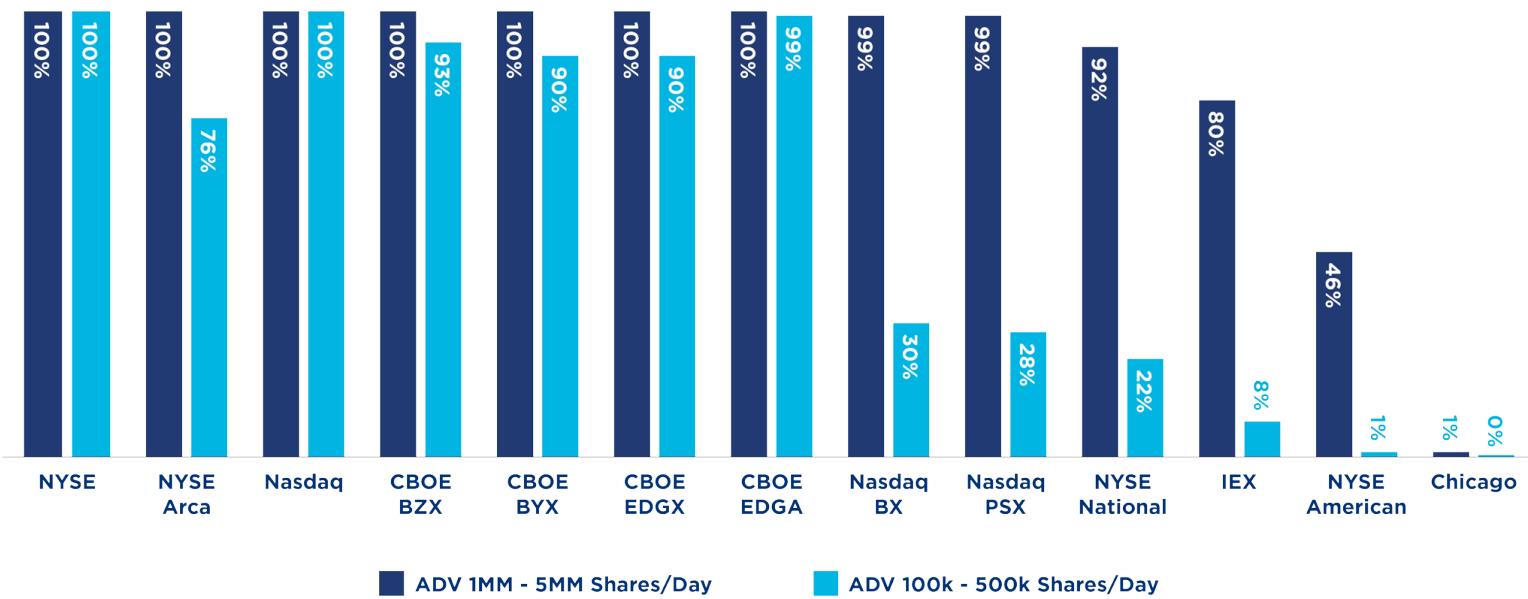
Credit to Those In the Arena: Enhanced Quoted Spread

In today's U.S. equities markets, roughly 60% of volume executes on an exchange and 40% executes off-exchange in dark pools and other broker-dealer facilities. All activity, both on and off exchange, relies on the quoted prices from exchanges to inform transaction pricing. This makes the National Best Bid and Offer (NBBO), reflecting the best quoted prices from all exchanges, a key benchmark for all types of trading, including midpoint trading leveraged by institutional investors and price improvement offered to retail investors. We have seen that the quality and quantity of quotes contributing to the NBBO can vary dramatically between exchanges, which we can measure using a new metric called "Enhanced Quoted Spread."

Quoted Spread & Exchange Competition

The NBBO that facilitates midpoint trading and retail price improvement arises from robust competition among exchanges to provide the highest bid and lowest offers for the longest portion of the day. One standard calculation for quoting performance is the exchange's average quoted spread. Taking a simple average of quotes published by an exchange, however, can hide an important fact: many exchanges offer two-sided quotes for only a small portion of the day in many stocks. This means that an exchange's "average" quoted spread may exist for only fleeting moments of the day, and market participants looking to execute on such an exchange may frequently find the venue does not offer a competitive quote (or sometimes any quote at all).

**Percent of NYSE-listed Stocks
Quoted at Least 75% of the Trading Day**



The Enhanced Quoted Spread (EQS) measure addresses this by replacing any missing quotes with the value of the Limit Up Limit Down (LULD) band.¹ If an exchange has a one-sided quote, or no quote at all, we assign that exchange the LULD band price rather than drop the observation. With this method, exchanges with occasional or periodic quotes incur a penalty for their lack of displayed liquidity rather than misrepresenting a tight but infrequent displayed market as narrow on average.

The Cost of Not Showing Up

For many exchanges, the EQS calculation is similar to the average quoted spread calculation, especially in active stocks. For example, in active NYSE names, NYSE, NYSE Arca, and Nasdaq have nearly equal quoted spread and EQS calculations. However, exchanges with low market share and/or dark-oriented trading models fare worse under the EQS approach in both active and less-active stocks. For example, three venues exhibit EQS metrics of several times their standard quoted spread results, indicating they frequently have no displayed quote in the market.

**NYSE-Listed High-Volume Stocks
Q3 2018**

Entity	Quoted Spread (bps)	Enhanced Quoted Spread (bps)	% Change
NYSE	11	11	0.0%
NYSE Arca	19	20	1.2%
NYSE National	663	831	25.3%
Nasdaq	13	13	0.0%
Nasdaq BX	89	96	8.8%
Nasdaq PSX	181	195	7.4%
CBOE BZX	14	15	3.7%
CBOE EDGX	35	36	2.0%
CBOE BYX	69	70	0.8%
CBOE EDGA	105	106	0.4%
IEX	131	407	210.5%
NYSE American	199	1241	524.2%
Chicago	76	1565	1959.7%

**NYSE-Listed Low-Volume Stocks
Q3 2018**

Entity	Quoted Spread (bps)	Enhanced Quoted Spread (bps)	% Change
NYSE	30	30	0.0%
NYSE Arca	89	96	8.0%
NYSE National	2001	2373	18.6%
Nasdaq	73	73	0.0%
Nasdaq BX	266	354	32.9%
Nasdaq PSX	545	656	20.2%
CBOE BZX	56	59	3.7%
CBOE EDGX	165	171	3.4%
CBOE BYX	175	178	2.0%
CBOE EDGA	229	230	0.7%
IEX	184	1070	480.4%
NYSE American	92	1771	1835.7%
Chicago	115	2042	1679.8%

So What?

As many investors have focused more attention on off-exchange trading, the exchange contribution to price formation has become frequently overlooked or even derided, even though off-exchange trades rely on exchange quotes to set prices. As the Enhanced Quoted Spread shows, contributions to price formation vary widely among exchanges. Maker/taker venues consistently outperform other venue types in both average quoted spread and in the EQS measure, suggesting that under today's market construct pricing incentives contribute positively to both the quality and reliability of displayed quotations.

1Â The NYSE wishes to thank David Weisberger, who gave us the idea for this calculation.