Financial Industry Regulatory Authority

September 13, 2013

I. EXECUTIVE SUMMARY

On October 6, 2011, FINRA filed with the SEC a proposed rule change to amend the minimum quotation sizes (or "tier sizes") for OTC equity securities[1] to, among other things, simplify the tier structure, facilitate the display of customer limit orders and expand the scope of the Rule to apply to additional quoting participants. During the proposal process, the SEC received a number of comments and, in response, FINRA proposed that the new tier sizes operate on a pilot basis for one year to allow FINRA and the SEC to better analyze the impact of the revised tier sizes. During the comment process, commenters raised a variety of concerns regarding the potential impact of the revised tiers. The primary concerns raised by commenters related to: (1) market-maker behavior, (2) market quality (including on liquidity and spreads), and (3) customer limit order display. On November 12, 2012, FINRA implemented the revised tiers on a pilot basis.

As discussed more fully below and in the accompanying Cornerstone Study,[2] FINRA believes that the Pilot accomplished its intended objectives without adversely impacting market-maker behavior, market quality (including on liquidity and spreads), or customer limit order display. FINRA believes that the impact of the revised tier sizes on the number of customer limit orders eligible for display was positive and that the overall impact of the revised tier sizes on market maker behavior and market quality was generally neutral with some metrics reflecting positive changes. Accordingly, FINRA is recommending that the SEC approve the adoption of the revised tier sizes on a permanent basis.

II. OVERVIEW

FINRA Rule 6433 (Minimum Quotation Size Requirements For OTC Equity Securities) (the "Rule") sets forth the minimum quotation sizes that may be displayed on any inter-dealer quotation system that permits quotation updates on a real-time basis in OTC equity securities. Under the Rule, different minimum quotation sizes apply depending upon the price level of the bid or offer and, therefore, a different minimum quotation size can apply to each side of the market being quoted by a member in a given security.

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1 An OTC equity security is an equity security that is not an "NMS Stock" as defined in Rule 600(b)(47) of SEC Regulation NMS. *See* FINRA Rule 6420(f).

2 FINRA engaged Cornerstone Research ("Cornerstone") to conduct an analysis of the impact of the Pilot on OTC market quality. A summary of the Pilot Assessment is provided in Section IV below and Cornerstone's study is attached as Appendix A and Supplemental Exhibits 10 and 11 ("Cornerstone Study").

On October 6, 2011, FINRA filed with the SEC SR-FINRA-2011-058, a proposed rule change to amend the minimum quotation sizes for OTC equity securities to, among other things, simplify the tier structure, facilitate the display of customer limit orders under FINRA Rule 6460 (Display of Customer Limit Orders) and expand the scope of the Rule.[3] The SEC received a number of comments on the Original Proposal and, in response to those concerns, FINRA ultimately proposed revised tier sizes[4] and further proposed that the new tier sizes operate on a pilot basis for one year ("Minimum Quotation Size Pilot" or "Pilot")[5] to allow FINRA and the SEC the opportunity to better analyze the impact of the Pilot.[6]

The minimum quotation sizes in effect prior to the Pilot, which was implemented on November 12, 2012, consisted of nine tiers that applied only to market makers displaying quotations in OTC equity securities, and ranged in price categories from $0.00 through $2,500.01 (*See* TABLE 1). The Pilot provided for six revised tier sizes for quotations in OTC equity securities, whether displayed by market makers (both representing proprietary and customer interest), alternative trading systems or any other member firm. (*See* TABLE 2).

TABLE 1

Price (Bid or Offer)	**Minimum Quote Size** (# of shares)
$0 to $0.50	5,000
$0.51 to $1.00	2,500
$1.01 to $10.00	500
$10.01 to $100.00	200
$100.01 to $200.00	100
$200.01 to $500.00	25
$500.01 to $1,000.00	10
$1,000.01 to $2,500.00	5
$2,500.01 +	1

3 *See* Securities Exchange Act Release No. 65568 (October 14, 2011), 76 FR 65307 (October 20, 2011) (File No. SR-FINRA-2011-058; Notice of Filing of Proposed Rule Change To Amend FINRA Rule 6433 (Minimum Quotation Size Requirements for OTC Equity Securities)) ("Original Proposal").

4 *See* Amendment No. 1 to File No. SR-FINRA-2011-058 ("Amendment No. 1").

5 *See* Amendment No. 2 to File No. SR-FINRA-2011-058 ("Amendment No. 2").

6 *See* Securities Exchange Act Release No. 67208 (June 15, 2012), 77 FR 37458 (June 28, 2012) (File No. SR-FINRA-2011-058; Notice of Filing of Amendment No. 2 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To Amend FINRA Rule 6433 (Minimum Quotation Size Requirements for OTC Equity Securities)) ("Minimum Quotation Size Approval Order").

TABLE 2

Price (Bid or Offer)	**Minimum Quote Size** (# of shares)
$0.0001 to $0.0999	10,000
$0.10 to $0.1999	5,000
$0.20 to $0.5099	2,500
$0.51 to $0.9999	1,000
$1.00 to $174.99	100
$175.00 +	1

III. PILOT OBJECTIVES AND DATA COLLECTION

The objectives of the Minimum Quotation Size Pilot included: (1) simplifying the structure of the tiers; (2) modernizing the minimum sizes, including in light of regulatory changes; (3) providing for uniform treatment of the types and sources of quotations that would be subject to the Minimum Quotation Size Rule; and (4) facilitating greater display of customer limit orders.

The Pilot simplified the tier structure in a variety of ways. Reducing the number of tiers and conforming the minimum quotation size applicable to OTC equity securities priced between $1.00 and $174.99 to the one hundred share-minimum generally applicable on exchanges accomplished the structural simplification sought to be achieved. In addition, the Pilot revised the smallest price point from $0.00 to $0.0001 to conform to the minimum quotation increments under FINRA Rule 6434 (Minimum Pricing Increments for OTC Equity Securities), which, among other things, prohibits members from displaying a bid or offer in an OTC equity security in an increment smaller than $0.01 if the bid or offer is priced $1.00 or greater per share, or in an increment smaller than $0.0001 if the bid or offer is priced below $1.00.

FINRA also expected that the Pilot's revised tier sizes would result in benefits to investors by facilitating the display of customer limit orders under FINRA's limit order display rule,[7] which generally requires that OTC market makers fully display better-priced customer limit orders (or same-priced customer limit orders that are at the best bid or offer and that increase the OTC market maker's size by more than a *de minimis* amount). OTC market makers are not required to display a customer limit order on an inter-dealer quotation system unless doing so would comply with the minimum quotation size applicable to the price of the quotation. Therefore, although a customer limit order may otherwise have been required to be displayed under the limit order display rule because it improved the price or size more than a *de minimis* amount, if the order is less than the minimum quotation size, the member would not be required to display the order. FINRA believed that the revised tiers set forth in the Pilot would improve overall display of customer limit orders.

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[7] *See* FINRA Rule 6460.

For example, because the Pilot would reduce the tier size from 2,500 to 100 shares for securities priced at or above $1.00, FINRA believed that competitively priced customer limit orders, which tend to be smaller sized orders, would be more likely to be displayed and potentially yield a variety of benefits, including improved price transparency, enhanced execution of customer limit orders and narrower spreads. As further discussed below in Section IV, FINRA believes that the Pilot generally resulted in the anticipated effect in this regard.

To effectively assess the impact of the Pilot on quoted OTC equity securities, FINRA collected and provided to the Commission certain pre and post-pilot data. Specifically, FINRA provided the following data to the SEC aggregated daily by symbol for those securities subject to the Pilot:[8]

- The price of the first trade of each trading day executed at or after 9:30:00 a.m., based on execution time.
- The price of the last trade of each trading day executed at or before 4:00:00 p.m., based on execution time.
- Daily share volume.
- Daily dollar volume.
- Number of limit orders from customers and in total.
- Percentage of the day that the size of the BBO (i.e., best bid and offer on FINRA's OTCBB facility and OTC Link) equals the minimum quote size.
- Number of market makers actively quoting.
- Number of executions from a limit order and number of limit orders at the BBO or better by tier size from a customer and in total.
- Liquidity/BBO metrics
    - Time-weighted quoted spread.
    - Effective spread.
    - Time-weighted quoted depth (number of shares) at the inside.
    - Time-weighted quoted depth (dollar value of shares) at the inside.[9]

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[8] If an OTC equity security was not quoted on an inter-dealer quotation system during the Pilot period, it was not subject to the Pilot.

[9] FINRA also provided the listed data to the SEC for five random days from each month for a one-year period prior to the effective date of the Pilot. Three months after the Pilot commenced, FINRA started to provide SEC staff with monthly reports that contained the listed data for each day during the month. The data for

FINRA also committed to providing an assessment to the SEC addressing the impact of the pilot, the validity of concerns raised by commenters during the rule filing process, whether the pilot resulted in the desired effects, conclusions regarding the impact of the pilot on liquidity (and potentially other measures of market quality) of the stocks in each tier, and whether the tier cutoffs or sizes should be revised in light of the impact of the Pilot on the over-the-counter market.

IV. PILOT ASSESSMENT RESULTS

A. Overview of Market Impact

FINRA believes that the Pilot accomplished its intended objectives without adversely impacting market-maker behavior, market quality (including on liquidity and spreads), or customer limit order display. This belief is supported by the results of the Cornerstone Study, as well as other data analyzed by FINRA. The results of the study are discussed further in Section IV.B. In addition, analysis conducted by FINRA indicates that the impact of the revised tier sizes on the number of customer limit orders eligible for display was positive. This is discussed further in Section IV.C. Importantly, the increase in the number of customer limit orders eligible for display is the most likely explanation for the decrease in quoted spreads that was observed for securities priced greater than $0.20 and the decrease in effective spreads for retail trades in securities priced between $1.00 and $100.00. There also is mixed evidence with respect to market quality for securities priced less than $0.10 (Tier 1).

B. Impact on Market Quality

FINRA believes that the Cornerstone Study generally shows that the Pilot had a neutral to positive impact on OTC market quality for the majority of OTC equity securities and tiers. While the evidence produced by the study generally supports the conclusion that the Pilot is associated with increased limit order display and narrower spreads, evidence for Tier 1 securities is mixed. Evidence suggested that effective spreads have widened, but also no significant reduction in quoted depth at the BBO was observed. As a result, the results are not conclusive. The study found evidence that some large market makers initially responded to the Pilot by reducing the number of OTC equity securities for which they displayed a priced quotation, and instead quoted on a name-only basis in the vast majority of these cases. While some large market makers reduced the number of securities actively quoted on a priced basis, Cornerstone's analysis suggests that many of these same market makers were continuing to provide liquidity throughout the Pilot. Moreover, notwithstanding the initial decline in the number of quoting market maker positions, the number of market makers providing quotes increased over the duration of the Pilot.

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each month was provided to the SEC within 20 business days of the beginning of the following month.

The study investigated whether the Pilot had a statistically significant impact on market quality by comparing a number of important quality measures during the Pilot to those measures during the pre-Pilot period.[10] Since the minimum quotation size increased for one price level, remained the same for some price levels, and decreased for most price levels during the Pilot, the study controlled for this variation in treatment by comparing market quality measures within tier size categories pre- and post-Pilot. Also, since the tier size categories and price ranges during the pre-Pilot did not directly match up with the Pilot tier size categories and price ranges, the study matched pre-Pilot and Pilot data by price level to maintain consistency across every variation in Pilot treatment. Among other things, this resulted in the Pilot's Tier 5 ($1.00 to $175.00) being decomposed into three subcategories for analysis.[11]

The results of the study suggest that the Pilot had a neutral to positive impact on market quality for OTC equity securities where the minimum quotation size decreased (Tiers 3, 4, 5a, and 5b).[12] The study found that effective spreads generally remained the same or decreased, quoted spreads decreased, and price impact generally decreased for these tiers.

However, the study also found that displayed depth at the BBO declined, while an alternative displayed depth measure, one that assesses depth beyond the BBO and provides a fairer comparison of depth when quoted spreads narrow, remained the same or declined. The study also indicated that the ability to execute trades larger than the displayed depth remained essentially unchanged during the Pilot.

The effective spread and price impact results are particularly important because these measures are more comprehensive, better represent the experience of investors in the market and implicitly take into account the contemporaneous decline in quoted spreads (positive toward market quality) and the decline in displayed depth (negative toward market quality). The results generally show declines in effective spreads and price impact for Tiers 5a and 5b, suggesting an overall positive impact on market quality.

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10 Due to the small number of securities within the Pilot's Tier 6 (which previously was comprised of higher priced issues in Tiers 5 through 9 in the pre-Pilot tier structure), Tier 6 was omitted from the study. Please see footnote 14 of the Cornerstone Study for further information.

11 The Pilot's Tier 5, which included securities priced between $1.00 and $175.00, was divided into three subcategories – 5a, 5b and 5c – for analysis in the Cornerstone Study. The resulting categories are Tier 5a, which ranged from $1.00 to $10.00; Tier 5b, which ranged from $10.00 to $100.00; and Tier 5c, which ranged from $100.00 to $175.00. *See* Table 1 of Appendix A for further information.

12 *See* Table 3 of Appendix A for a comprehensive overview of the results.

The results generally show no change in effective spreads and a decline in price impact for Tiers 3 and 4, suggesting a more neutral or slightly positive impact on market quality.

The results of the study also suggest that the Pilot had a neutral or negative impact on market quality for OTC equity securities where the minimum quote size requirement increased (Tier 1). The study found that quoted spreads remained the same, displayed depth at the BBO remained the same, and price impact generally remained the same or decreased. However, the study also found that effective spreads remained the same or increased and the alternative displayed depth measure remained the same or decreased. Since the two more comprehensive measures (effective spreads and price impact) offer somewhat contradictory results, the overall evidence is not conclusive with regard to market quality with respect to Tier 1.

The results of the study also suggest that the Pilot had a neutral impact on market quality for securities where the minimum quote size requirement remained the same (Tiers 2 and 5c). The study found that effective spreads remained the same, quoted spreads remained the same or decreased, displayed depth at the BBO remained the same, the alternative displayed depth measure generally remained the same, and price impact remained the same or decreased for these tiers. As expected, the Pilot appears to have had very little effect on these tiers.

There was also some evidence that some large market makers reduced the number of securities they actively quoted upon the initiation of the Pilot.[13] The observed behavior occurred in securities in all tiers, regardless of whether the minimum quotation size increased, decreased or remained the same. FINRA concludes that the large reduction in the number of securities actively quoted by certain market makers appears to have been temporary and gradually reversed over time. The market making data is consistent with the explanation that the Pilot initially gave some market makers a reason to re-evaluate their market making risk and drop active quoting in securities to reduce risk. But when the Pilot did not have dire consequences on market making, these same market makers expanded their breadth of active quoting during the Pilot. The market quality metrics analyzed and discussed previously would have encompassed any impacts on market quality due to changes in market maker quoting.

C. Impact on Customer Limit Order Display

FINRA analyzed the number of customer limit orders that would be eligible for display under both the Pilot and pre-Pilot tier sizes and observed that for all tier sizes combined, there was a 13% increase in the number of customer limit orders that met the minimum quotation sizes to be eligible for display under the Pilot tiers. While the 13%

[13] *See* page 5, #16 and Exhibit 1 of the Cornerstone Study. Many market makers continued to quote in name only; this behavior is not reflected in the actively quoted numbers.

overall increase is meaningful, FINRA observed a significant increase in the number of customer limit orders in securities priced between $0.20 and $100.00 that became eligible for display. TABLE 3 below reflects the percentage of customer limit orders that were equal to or greater than the minimum quotation size under both the Pilot and pre-Pilot tier sizes for each defined price range included in either the Pilot or pre-Pilot tier size levels.

TABLE 3

Price Range	**Pilot Tier Size**	**Customer Limit Orders ≥ Tier Size**	**Pre-Pilot Tier Size**	**Customer Limit Orders ≥ Tier Size**
0.0001-0.0999	10,000	78.29%	5,000	86.30%
0.10-0.1999	5,000	56.89%	5,000	56.89%
0.20-0.5099	2,500	57.35%	5,000	43.30%
0.51-0.9999	1,000	72.81%	2,500	46.05%
1.00-10.00	100	97.86%	500	74.73%
10.01-100.00	100	98.24%	200	87.93%
100.01-174.99	100	90.49%	100	90.49%
175.00-200.00	1	100%	100	96.71%
200.01-500.00	1	100%	25	90.74%
500.01-1,000.00	1	100%	10	64.62%
1,000.00-2,500.00	1	100%	5	61.38%
2,500.00+	1	100%	1	100.00%

FINRA notes that, of the 301,628,686 customer limit orders reported to FINRA's Order Audit Trail System ("OATS") between November 1, 2012 and June 30, 2013, over 86.6% were priced between 0.20 and 100.00. Of particular note, 58.7 million customer limit orders, or almost 20% of all customer limit orders, were priced between $1.00 and $10.00.[14] This price range experienced an increase of almost 24% in the number of customer limit orders that met the minimum quotation size to be eligible for display under the Pilot. Further, 181.6 million customer limit orders, or over 60% of all customer limit orders, were priced between $10.01 and $100.00. This price range experienced an increase of over 10% in the number of customer limit orders that met the tier sizes and were eligible for display under the Pilot tier sizes. Consequently, an additional 32 million customer limit orders priced between $1.00 and $100.00 became eligible for display during the Pilot that otherwise would not have been displayable.

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14 In performing these calculations and arriving at the described results, as noted in Amendment No. 2, FINRA calculated the percentage of customer limit orders at or above the minimum tier size by using all limit orders reported to OATS as being received by a FINRA member, including those received from other FINRA members. FINRA excluded all proprietary orders originated by a member from its calculations.

FINRA believes the material increase in the number of customer limit orders eligible for display directly contributed to the decrease in quoted spreads that were observed for OTC equity securities priced greater than $0.20 and the decrease in effective spreads for retail trades in securities priced between $1.00 and $100.00.

D. Discussion of Comments

During the notice and comment process for the proposed changes to Rule 6433, commenters raised a variety of concerns regarding the potential impact of the Pilot. The SEC received eight comment letters on the Original Proposal and two comment letters on Amendment No. 1.[15] The primary concerns raised by commenters related to: (1) market-maker behavior, (2) market quality (including on liquidity and spreads), and (3) customer limit order display.[16] As discussed more fully above (*See* Section IV) and in the Cornerstone Study, FINRA believes that the overall impact of the Pilot on market maker behavior and market quality was neutral to positive, and that the Pilot's impact on customer limit order display was positive.

Market Maker Behavior

Commenters raised concerns that the Pilot would result in a reduction in market makers quoting OTC equity securities, which, in turn, could erode liquidity in the marketplace.[17]

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15 *See* Letters to Elizabeth M. Murphy, Secretary, Commission, from Suzanne H. Shatto, Seattle, Washington, dated October 20, 2011; Naphtali M. Hamlet, Seattle, Washington, dated October 21, 2011; Daniel Zinn, General Counsel, OTC Markets Group, Inc., dated November 10, 2011; Michael T. Corrao, Managing Director, Knight Capital Group, Inc., dated November 16, 2011; R. Cromwell Coulson, President and CEO, OTC Markets, dated November 18, 2011; Daniel Zinn, General Counsel, OTC Markets Group, Inc., dated December 29, 2011; Michael T. Corrao, Managing Director, Knight Capital Group, Inc., dated January 13, 2012 and Daniel Zinn, General Counsel, OTC Markets Group, Inc., dated February 14, 2012 on the Original Proposal. See Letter from Daniel Zinn, General Counsel, OTC Markets Group, Inc., dated May 7, 2012 and Michael T. Corrao, Managing Director, Knight Capital Group, Inc., dated May 7, 2012 on Amendment No. 1. (All of the letters from Knight Capital Group, Inc. are collectively referred to as "Knight letters." All of the letters from OTC Markets Group, Inc. are collectively referred to as "OTC Markets letters.").

16 FINRA notes that the majority of the comments received related to FINRA's Original Proposal. FINRA revised the originally proposed tiers in Amendment No. 1 and proposed to adopt those tiers on a pilot basis in Amendment No. 2. FINRA's summary and responses to comments are available at http://www.finra.org/Industry/Regulation/RuleFilings/2011/P124615.

17 *See* Knight letters.

As noted above, there was an initial move to name-only quotations by some market makers, but as the Pilot progressed FINRA saw an overall increase in the number of market makers quoting OTC equity securities over the duration of the Pilot. Accordingly, because the concern about the departure of quoting market makers did not materialize, FINRA does not believe there is evidence to support the position that market liquidity was harmed by fewer market makers.

Impact on Market Quality

Certain commenters also believed that reduced minimum tier sizes would lead to reduced displayed liquidity and less efficient, more-costly trading.[18] FINRA notes that the evidence collected during the Pilot indicates that, as was previously the case, market makers largely tended to quote at the required minimum size. In addition, the data shows that displayed depth at the inside market decreased for those securities whose minimum quote size decreased. While displayed liquidity at the inside market declined for these issues due to narrower spreads, Cornerstone found that there was not a significant reduction in total depth displayed within consistent price bands at 1%, 2%, 5% and 10% surrounding the midpoint. Moreover, based on the number of trades executed in amounts exceeding the minimum quote sizes, Cornerstone also concluded that "liquidity continued to be provided at levels greater than the minimum required depth and the change in the minimum quote size requirements did not significantly alter the ability to execute larger trades in the OTC market." Therefore, FINRA does not believe there is sufficient evidence to suggest that trading was either less efficient or more costly as a result of the revised minimum quotation sizes.

Concerns also were raised that the revised tier sizes could increase realized spreads.[19] As discussed in Section IV.A. and in the Cornerstone Study, FINRA believes the Pilot had a neutral to positive impact on market quality, including on liquidity and effective spreads, for the large majority of OTC issues.[20]

Limit Order Display

Comments also were raised regarding whether the Pilot would positively impact limit order display as FINRA anticipated. In particular, one commenter stated that the proposal would have a negligible effect on the display of customer limit orders in OTC equity securities, and questioned whether such change in display would offset the negative consequences on other aspects of market quality.[21]

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18 *See* Knight letters and OTC Markets letters.

19 *See* OTC Markets letters.

20 *See* Section IV and the Cornerstone Study.

21 *See* OTC Markets letters.

As discussed above in Section IV, the decrease in the minimum quotation size substantially increased the number of customer limit orders eligible for display. Specifically, under the Pilot, FINRA calculated that there was a 13% increase in the number of limit orders eligible for display, with the most significant increases in securities priced between $0.20 and $100.00.

V. FINRA RECOMMENDATION

Based upon FINRA's experience to date with the tier sizes operational during the Pilot and the information reflected above and in Appendix A, FINRA believes that the Pilot has accomplished its original objectives of: (1) simplifying the structure of the tiers; (2) modernizing the minimum sizes; (3) providing for uniform treatment of types and sources of quotations that would be subject to the Minimum Quotation Size Rule; and (4) improving display eligibility for customer limit orders.

In addition, as discussed above, while FINRA believes that the Cornerstone Study generally shows that the Pilot had a neutral to positive impact on OTC market quality for the majority of OTC equity securities and tiers, evidence for Tier 1 securities was mixed though not conclusive. Thus, recommends that the Pilot tiers be adopted for all OTC equity securities on a permanent basis.