SEC TICK SIZE PILOT

MEASURING THE IMPACT OF CHANGING THE TICK SIZE ON THE LIQUIDITY AND TRADING OF SMALLER PUBLIC COMPANIES

APRIL 7, 2017

On May 6, 2015, the Securities & Exchange Commission (SEC) issued an order approving a plan to implement a Tick Size Pilot (the Pilot) by the exchanges and FINRA. The Order approved the Pilot for a two-year period that commenced on October 3, 2016. The Pilot introduced new quoting and trading rules for smaller public companies that were included in one of three Test Groups created by the Pilot. The goal of the Pilot is to measure the impact of changing the tick size on the liquidity and trading of the Test Group securities.

The Equity Markets Association (EMA) believes the Pilot is a first step towards assessing whether liquidity in smaller companies can be enhanced. Consideration of the evolution of the U.S. equity markets from a "one size fits all" tick size regime should be carefully evaluated. The Pilot will help in this evaluation.

Currently, most stocks trade with a trading increment—or "tick size"—of a penny ($0.01) per share. The Pilot will attempt to assess whether widening the tick size to five cents per share ($0.05) will enhance the market quality of these stocks for the benefit of issuers and investors.

The Pilot includes Nasdaq-, NYSE- and NYSE MKT-listed common shares of operating companies with:

- Market capitalization of $3 billion or less,
- Average daily trading volume of one million shares or less, and
- Volume weighted average price of at least $2.00.

The Pilot consists of a control group (initially 1,200 securities) and three test groups of 400 securities each.

- Test groups were selected randomly.
- Companies cannot opt in or out of a particular group.
- Companies can be removed or can change groups due to M&A.
- New companies (IPOs) are not added.

DATA AND PRELIMINARY FINDINGS

While the effects of the Pilot are not surprising, it is too early to form definitive conclusions about the Pilot given that market participants are still adjusting to the Pilot's quoting and trading requirements.

Summary of the effects of the Pilot:

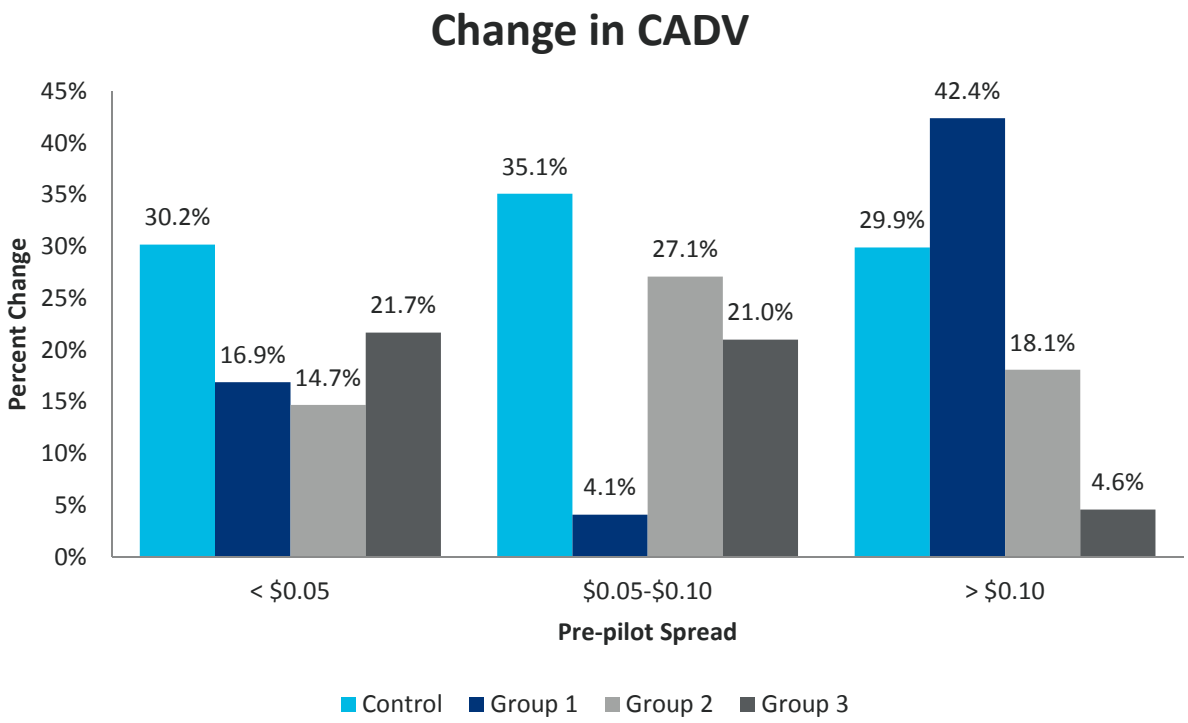
1. Three of nine Test Group/Quoted Spread categories tracked for this report have experienced a statistically significant smaller increase in average daily trading volume when compared to the increases observed in control group stocks.
2. Spreads have widened for stocks with pre-pilot quoted spreads below $0.05, widened slightly for stocks with pre-pilot spreads between $0.05 and $0.10, and narrowed for stocks with pre-pilot spreads above $0.10. All changes are statistically significant for all test groups and subgroups.
3. Market depth available at the best price has increased for all test group stocks, particularly for stocks with pre-pilot quoted spreads below $0.05.
4. Trading activity has shifted among exchanges and over-the-counter venues. Fragmentation of order flow increased in two of the three Test Groups and decreased in the third Test Group.
5. Given the large increase in liquidity available at the best price, the small increases in average trade size in the test groups suggests that institutions have not changed their behavior in accessing available liquidity.

Overall, we are encouraged by the commitment shown by the industry in implementing the Pilot and look forward to sharing further results with issuers and investors. Details of the preliminary effects of the Pilot can be found below.

Average Daily Volume

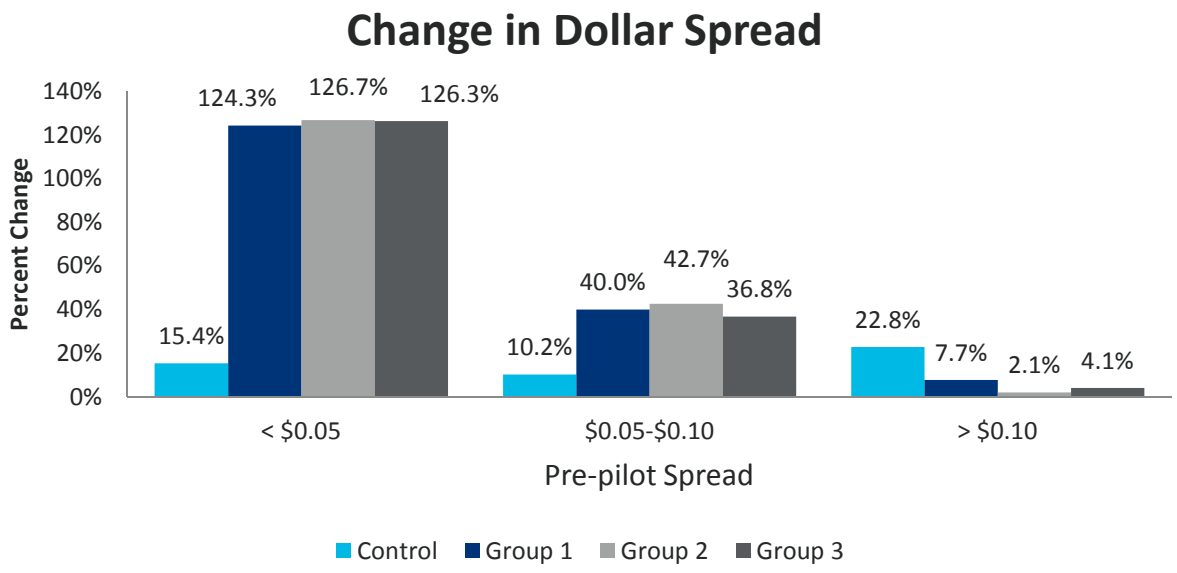
Average Daily Volume (ADV) is generally higher across all stocks. The differences between the increases in Control Group ADV and those of the Test Groups are statistically significant for three of the subgroups shown below.[1] Volume for stocks in Test Group 3 shifted to exchanges, while the opposite was true for stocks in Test Groups 1 and 2. Volume for Control Group stocks also shifted off exchange (dark pools, other ATS's, wholesalers), but not to the same degree as for stocks in Test Groups 1 and 2.

[1] < $0.05 pre-pilot spread in Test Group 2 (p=0.01), $0.05-$0.10 in Test Group 1 (p=0.038), > $0.10 in Test Group 3 (p=0.021)



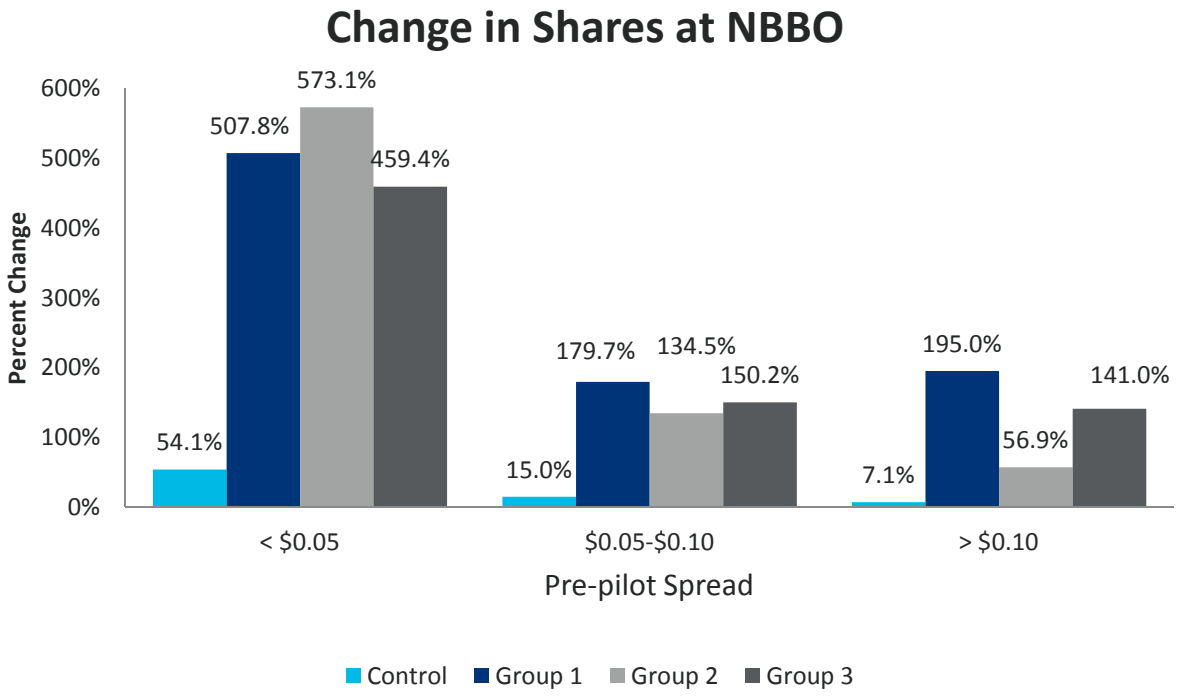
National Best Bid and National Best Offer Spread

The quoted spread as measured by the National Best Bid and Offer (NBBO) has widened in stocks in all three Test Groups that previously traded at less than the new minimum tick width of $0.05. Spreads for these issues are averaging around six cents as the quote may briefly maintain a $0.10 or wider differential immediately after all the liquidity is executed at a five cent spread. For stocks that previously had a spread in the $0.05-$0.10 range, NBBO spreads also widened in all Test Groups. Spreads in Test Group stocks that had spreads above $0.10 widened less than Control Group stocks. All changes in spreads are statistically significant relative to the spread changes observed for the Control Group.



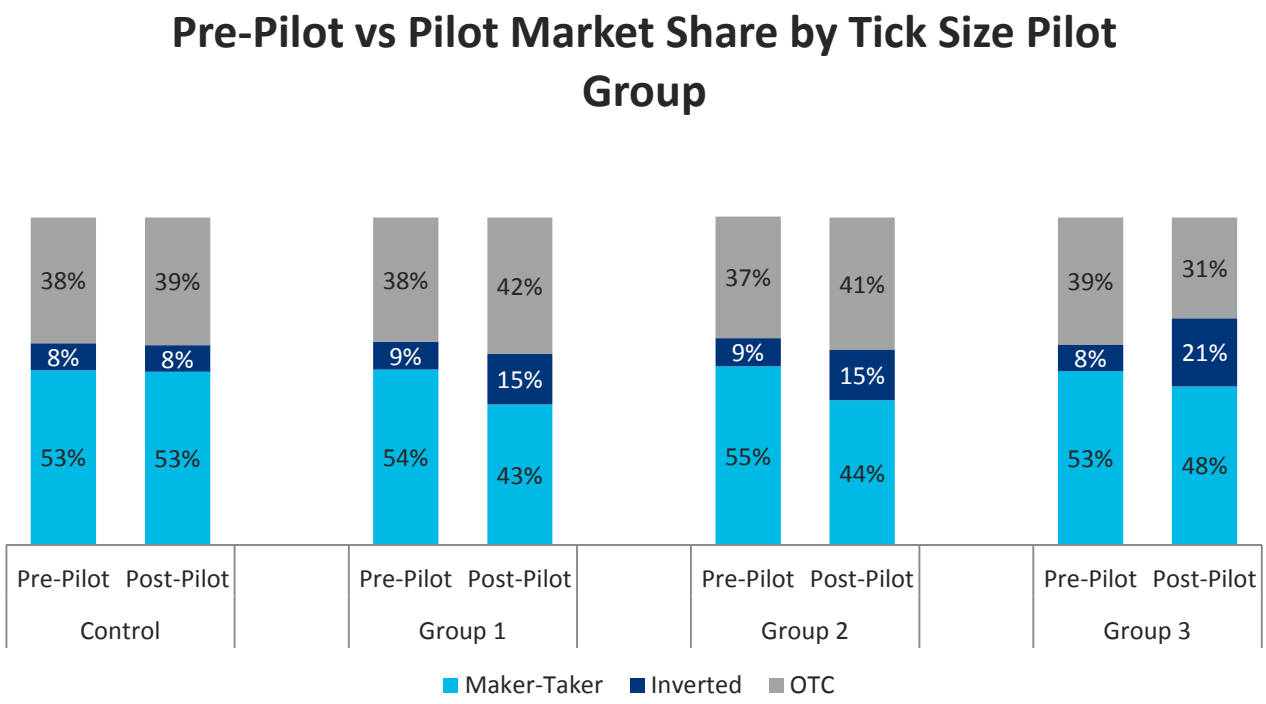
Depth

Shares available in the market at the best price have increased in all Test Group stocks relative to the Control Group. The increases are statistically significant. The increases are greatest for stocks that had a spread less than $0.05 prior to the start of the Pilot. For these stocks the increase in depth is proportionately larger than the widening of the spread due to the increase in the minimum increment. The increase in depth has also resulted in more exchanges providing liquidity at the best price, creating further market fragmentation.



Market Share Fragmentation

The increase in shares available in the market at the best price, especially at inverted exchanges, has caused trading activity to move across exchanges and off exchange venues. Trading volume has moved from standard exchanges to inverted exchanges and off exchange venues (OTC) in all Test Groups relative to the control group as brokers seek to spread their orders across as many venues as possible[2]. In Test Group 3 relatively more volume has moved to inverted exchanges than in the other two Test Groups and trading activity has fallen for off exchange venues, so trading is more concentrated on exchanges in Test Group 3 than in Test Groups 1 and 2. We expect further shifts in trading activity as brokers continue to enhance their trading algorithms.



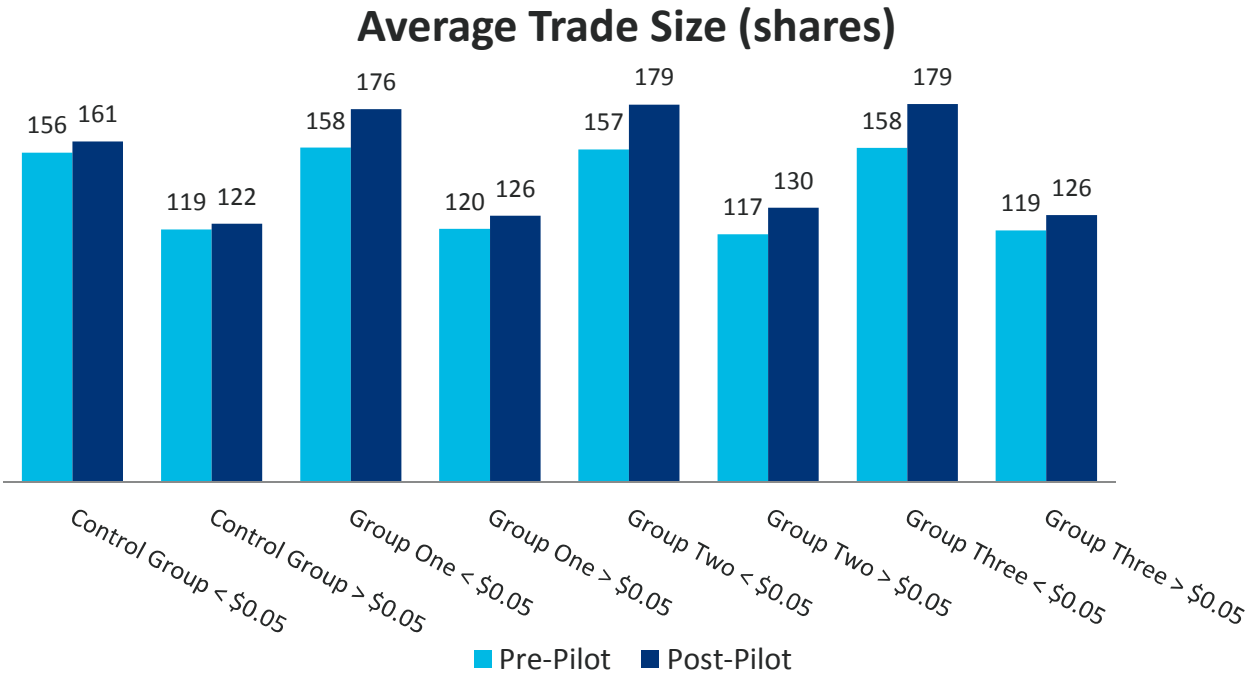
Average Trade Size

Average trade size in all Test Groups and subgroups has been larger during the Pilot than prior to the Pilot. Although trade size gains are greater in the test groups, the changes are dwarfed in comparison to the increase in shares available at the best price. For example, the average size at the best price in stocks that previously had spreads less than $0.05 is up by a factor of five to seven times, depending on the test group. Trade sizes have only increased 10-13%.

The relatively small change in trade side may be evidence that institutions attempting to access liquidity have not yet adjusted their behavior to the larger available liquidity at each price point.

[2] The term "standard exchange" refers to an exchange whose business model is to offer a financial incentive to post liquidity and to charge for taking liquidity. An "inverted exchange" reverses that business model and charges to post liquidity and offers a financial incentive to take liquidity.

Increased fragmentation, especially in Group 1 and Group 2, may also dampen average trade size as aggressive orders now execute across more venues.



Frequently Asked Questions

Which stocks are in the Pilot?

The Pilot consists of a control group and three test groups, with each test group having approximately 400 securities.

- Test groups were selected randomly using an SEC approved methodology.
- Companies cannot opt in or out of a particular group.

What are the trading rules for the control group and the test group?

- The control group is quoted and traded at their non-Pilot tick size increment.
- The first test group is quoted in $0.05 increments, but continues to trade at their non-Pilot price increment.

- The second test group is quoted and traded in $0.05 minimum increments, but allows certain exemptions for midpoint executions, retail investor executions, and negotiated trades.
- The third test group adheres to the requirements of the second test group, but also is subject to a "trade-at" prohibition. There is also an exemption for block size orders.

What is the “trade-at” prohibition?

- “Trade-at” refers to trading at the best price without having a displayed quote or order at that price (a characteristic of dark liquidity and internalization).
- A trade-at prohibition means national display priority: all displayed (lit) orders at a price level must be satisfied before a market participant can trade undisplayed (dark) at that price. Exchanges practice display priority within their order books today. Trade-at makes display priority national.
- If a venue is not displaying enough shares to fill an order, it must send the order to other venues up to the full size of their displayed liquidity at that price before it can fill any reserve or dark order on its own book.

How is the Pilot data distributed?

- The SROs must publish statistics monthly related to market quality for, and orders received in, all pilot stocks.
- FINRA will publish the data for the non-SRO trading centers, but it will not identify which data-sets belong to which trading centers.

What are key dates in the Pilot?

- The Pilot began Monday October 3, 2016
- During the month of October 2016 the test stocks were phased into trading in nickels.
- The SROs will deliver a study about the pilot’s impact to the SEC on April 2, 2018.
- The Pilot is scheduled to end on October 3, 2018. Depending on the results of the aforementioned study, the SEC may decide to extend the Pilot.

SEC Tick Pilot page, Pilot Group information begins on page 14 -- Click Here >