

November 13, 2014

BY ELECTRONIC MAIL ONLY

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: Pilot Plan to Assess Stock Market Tick Size Impact for Smaller Companies

Dear Ms. Murphy:

I am pleased to comment on the proposed tick size pilot program on behalf of RGM Advisors, LLC, a proprietary trading firm based in Austin, Texas. We have consistently supported data-driven analysis of market structure and encourage the Commission to rely on thoughtful reviews of empirical evidence in evaluating all aspects of market structure, including its review of tick sizes. Based on our empirical review, we urge the Commission to consider amending the pilot program to test smaller tick sizes for a group of liquid, large cap stocks.

Setting appropriate tick sizes is an important balancing act with significant consequences for market dynamics. In Regulation NMS, the Commission mandated a uniform penny tick size for all stocks over \$1. While this rule is simple and easy to understand, it does not allow for flexibility to vary tick sizes based on the characteristics of a stock, such as price, volume or liquidity. There are costs associated with tick sizes being either too small or too big. Excessively small tick sizes reduce incentives for traders to leave orders resting in order books, and lead to relatively higher messaging rates as traders fine-tune prices. Excessively large tick sizes diminish opportunities for traders to compete on price, favor the fastest traders who can get to new price levels first, and lead to artificially wide bid-ask spreads that increase costs for investors and drive volume off public markets to dark pools and other forms of internalization.

We recently conducted an internal study of the appropriateness of penny tick sizes in the US equity markets in which we reviewed a metric called *spread leeway*. This metric effectively quantifies the extent to which bid-ask spreads are constrained by the minimum tick size. It is useful in determining whether tick sizes are too big, too small or just right. For your reference, I am attaching slides that I presented at Georgetown University's Financial Market Quality Conference in September that highlight key findings of our study in the context of the proposed tick size pilot program.

Our review of spread leeway showed that while some stocks (particularly some small cap stocks) appear to have tick sizes that are too small, most trading today is in highly liquid, large cap symbols where the tick size is probably too big. In fact, trading in stocks where the tick size appears to be too large accounts for over 92% of all shares traded in Russell 1000 stocks. There are more than 600 symbols that trade with an average bid-ask spread of less than 1.2 cents, meaning that they are almost always constrained by the penny tick size.

Based on this analysis, an effective way to reduce trading costs for investors may be to reduce tick sizes in some stocks -- the opposite of what the proposed pilot program tests. This finding is consistent with academic studies of tick sizes, including two recent papers summarized in the attached presentation.

As presently proposed, the pilot program would not yield useful information about the impact of smaller tick sizes for liquid, large cap stocks. These stocks account for the vast majority of trading and reducing bid-ask spreads in this group could yield significant savings for investors. As such, I urge the Commission to consider amending the pilot program to test smaller tick sizes for a group of liquid, large cap stocks.

I appreciate the opportunity to comment on this initiative. If you have any questions about these comments, or if I can provide further information, please do not hesitate to contact me.

Sincerely,



Richard B. Gorelick
Chief Executive Officer
RGM Advisors, LLC

cc: Ms. Mary Jo White, Chair
Mr. Luis A. Aguilar, Commissioner
Mr. Daniel M. Gallagher, Commissioner
Ms. Kara M. Stein, Commissioner
Mr. Michael S. Piwowar, Commissioner
Mr. Stephen Luparello, Director, Division of Trading and Markets
Mr. Gregg E. Berman, Associate Director, Division of Trading and Markets

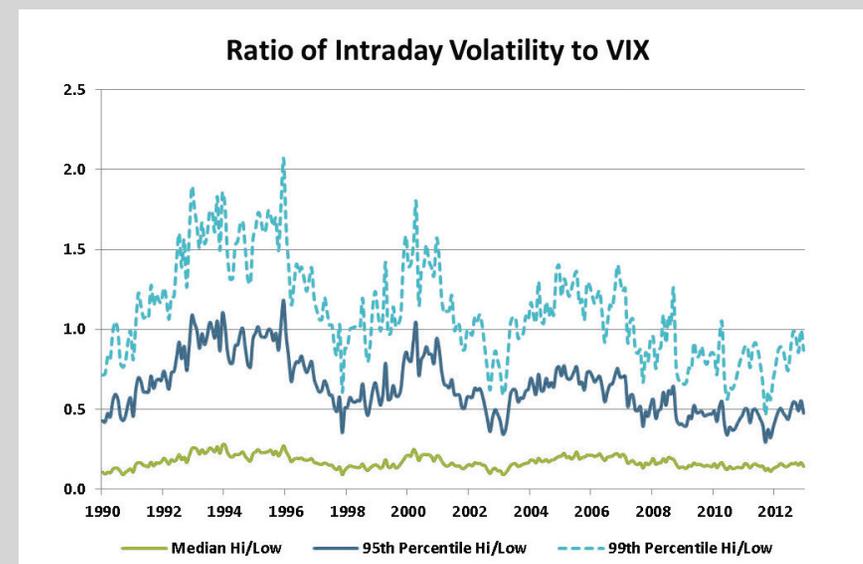
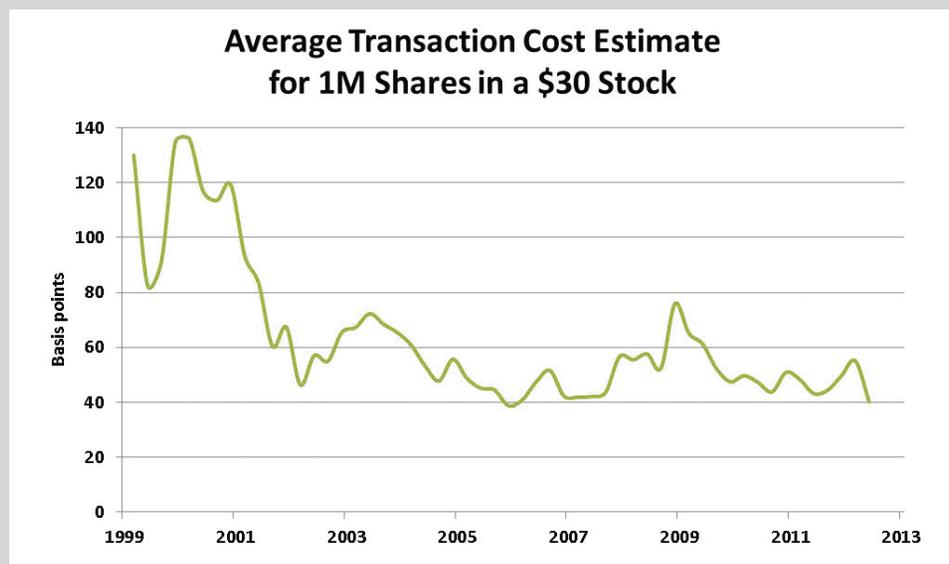
Discussion of Market Quality and Tick Sizes
Richard Gorelick, CEO
RGM Advisors, LLC

Georgetown University
Financial Market Quality Conference
September 16, 2014



US Equity Market Quality

- Evidence is clear that market quality has improved over recent decades as US equity markets have become more automated and more competitive
 - lower execution costs
 - reduced micro-volatility, and
 - improved price discovery
- Despite highly publicized claims that *High Frequency Trading* has harmed markets, most evidence suggests that it has generally been beneficial



- Recently, the market structure debate seems to have shifted to how market quality can be improved further through specific reforms
- Important voices at the SEC and on the Hill, as well as from exchanges and market participants, have called for a comprehensive review of the current market structure with a view to making markets:
 - even lower cost
 - more resilient
 - more fair
 - more transparent
 - less complex
- Discussions of market structure reform should be based on thoughtful analysis of empirical evidence

Interest in Tick Sizes

- “The tick size of a trading instrument is its minimum price movement; in other words, it is the minimum increment in which prices can change.” (Investopedia)
- Interest in markets around the world about setting appropriate tick sizes
 - In the U.S. equity markets, the SEC will conduct a pilot program on wider tick sizes for small cap stocks
 - In Europe, MIFID 2 requires regulators to set tick sizes to reflect the liquidity profile of various instruments
 - In Japan, the TSE recently reduced tick sizes in a number of stocks

Academic Interest in Tick Sizes

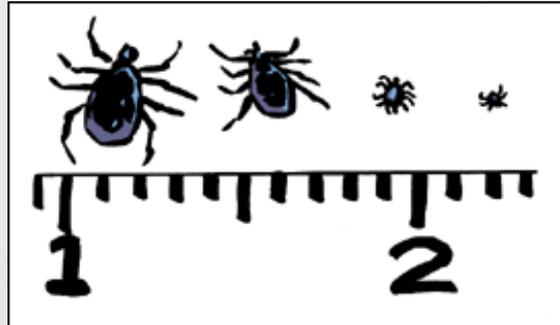
- O'Hara, Saar, and Zhong (2014):
 - Studies market quality as a function of relative tick size
 - tick increment / stock price
 - Uses NYSE-listed stocks and unique trader-specified NYSE data set
 - Little evidence to suggest that larger relative tick sizes increase liquidity
 - Suggests that increasing tick sizes of small stocks will not improve U.S. equity markets
- Buti et al (2014):
 - Constructs a model of a limit book in fragmented markets
 - Examines role of tick size on market quality measures
 - Tick-size reductions may benefit lower-priced and higher liquidity stocks
 - Little theoretical or empirical evidence to motivate increasing tick sizes

Balancing Act

- If tick sizes are ***too small***:
 - reduces incentive for traders to leave orders resting in order books
 - leads to higher message rates, as traders fine-tune prices
 - benefits retail investors, potentially at the expense of institutions
- If tick sizes are ***too large***:
 - reduces opportunities for traders to compete on price
 - favors the fastest traders who can get to new price levels first
 - creates artificially wide bid-ask spreads that cost retail investors
 - drives volume off public markets to dark pools and internalization



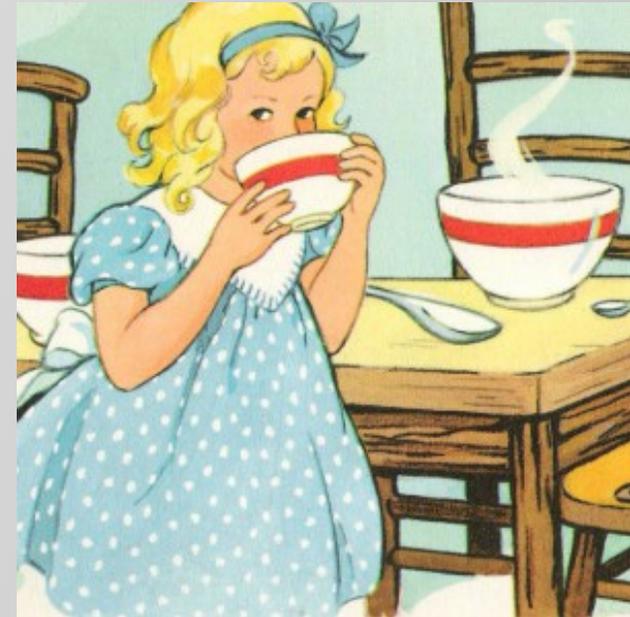
So how should we measure tick sizes?



- *Spread leeway* is an important empirical measure of the appropriateness of a tick increment
 - equal to the $(\text{Average Quoted Spread} / \text{Minimum Tick Size}) - 1$
 - a measure of the size of the minimum tick compared to bid-ask spread
 - for example, if the minimum tick size is .01 and the average quoted bid-ask spread is .02, the spread leeway would be $(.02/.01) - 1 = 1$.
- A small spread leeway indicates that bid-ask spreads are constrained by the minimum tick increment and it is more difficult for traders to post a new and better bid or offer

So what Spread Leeway is *just right*?

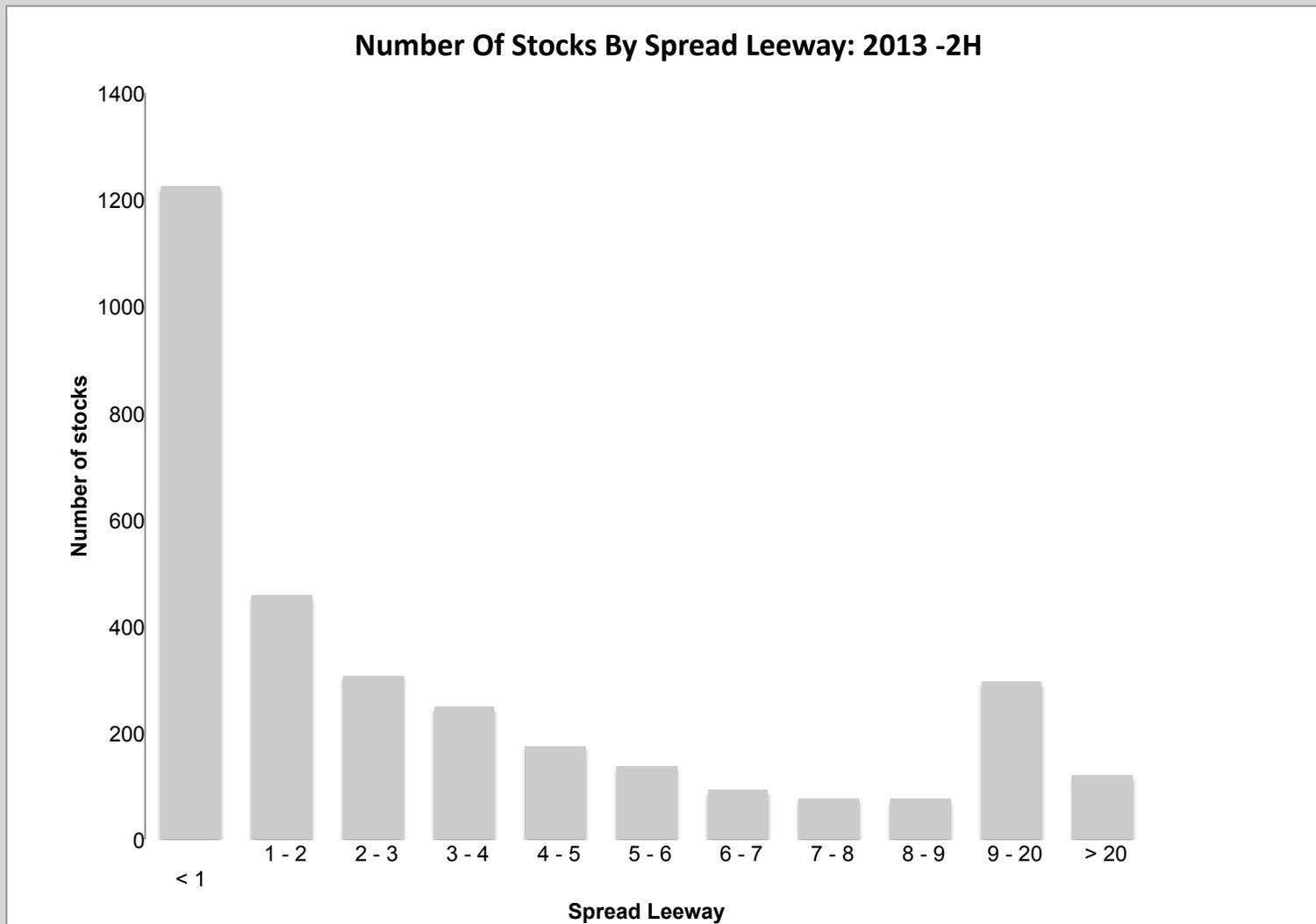
- People have suggested a variety of ranges in a variety of markets for the optimal “spread leeway”
 - In a 2013 letter to the SEC, BATS US suggested that **1 to 9** * was appropriate
 - In a 2009 study, BATS Europe stated that the ideal range was **3 to 10**
 - In a 2009 paper, Deutsche Börse stated that the optimal range was **5 to 19**
- For purposes of our study, we conservatively consider **2 to 9** to be optimal
 - values less than 2 indicate that the current tick increment is too large
 - values greater than 9 indicate that the current tick increment is too small



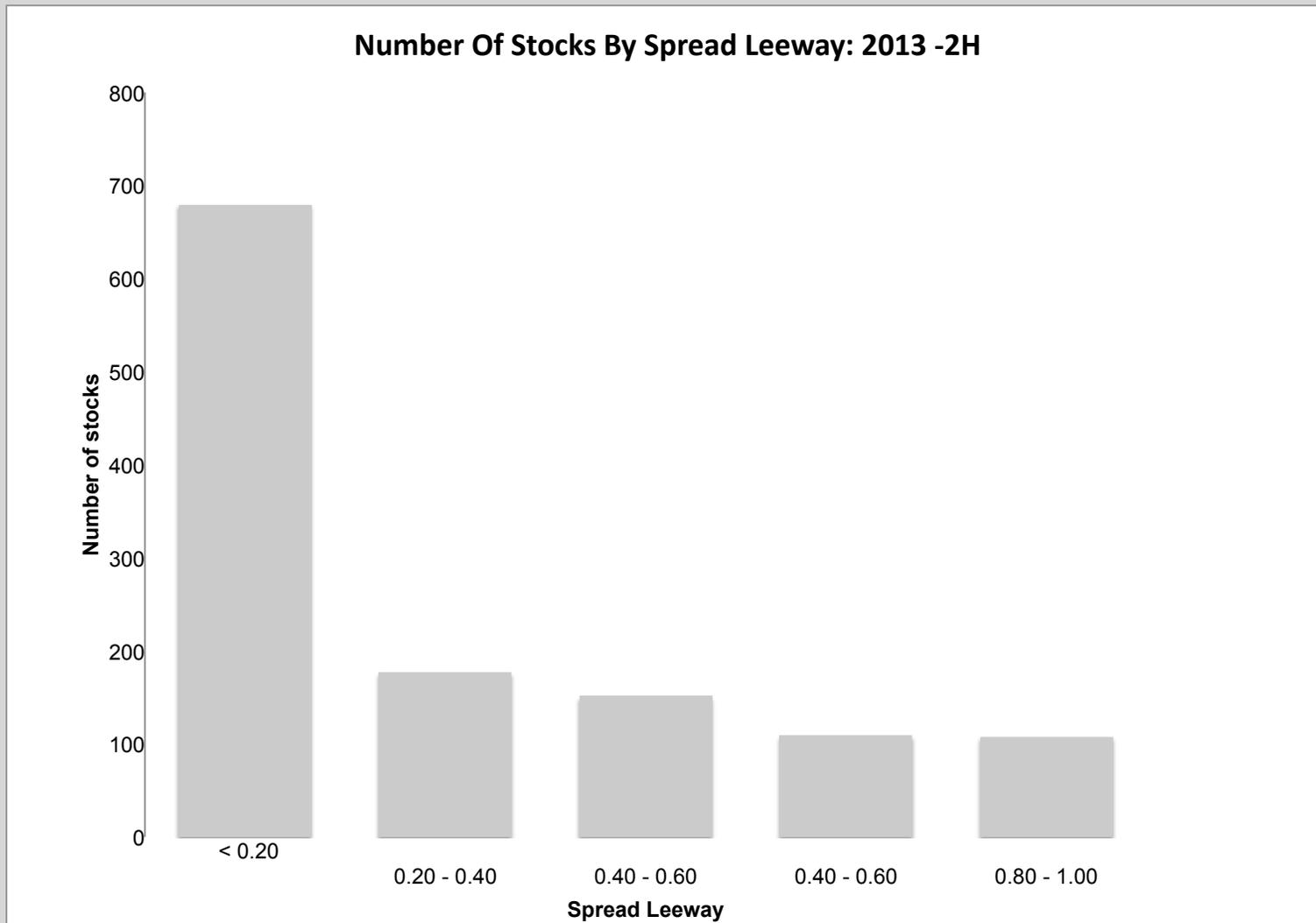
Empirical Study of Spread Leeway Methodology

- Studied all US NMS stocks and ETFs with a share price of >\$1
- Bid-ask spread and prices, sampled:
 - from July 1 to December 31, 2013
 - every 1 second during regular trading hours
 - exclude first and last five minutes of day
 - across 8 highest volume exchanges
- Volume is single-counted average daily volume including all on- and off-exchange shares traded
- Caveats
 - internal study; pretty confident in the data and the conclusions, but not published or peer reviewed
 - do try this at home

Spread-Leeway All Symbols



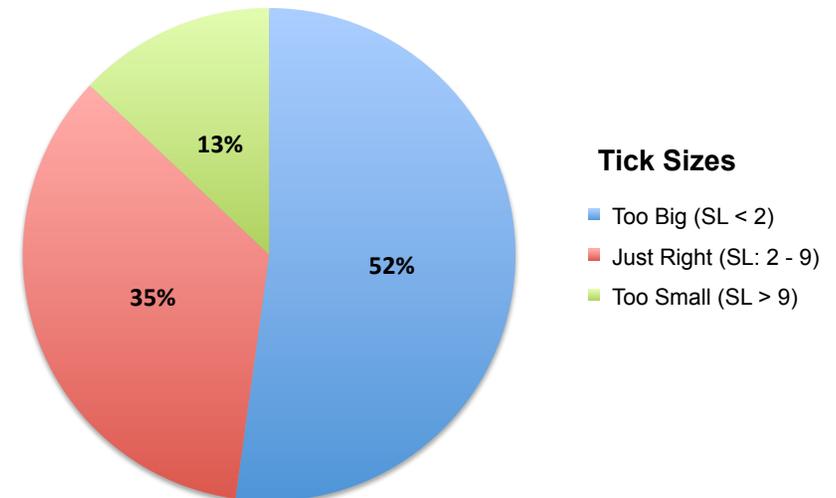
Spread-Leeway <1 drill-down



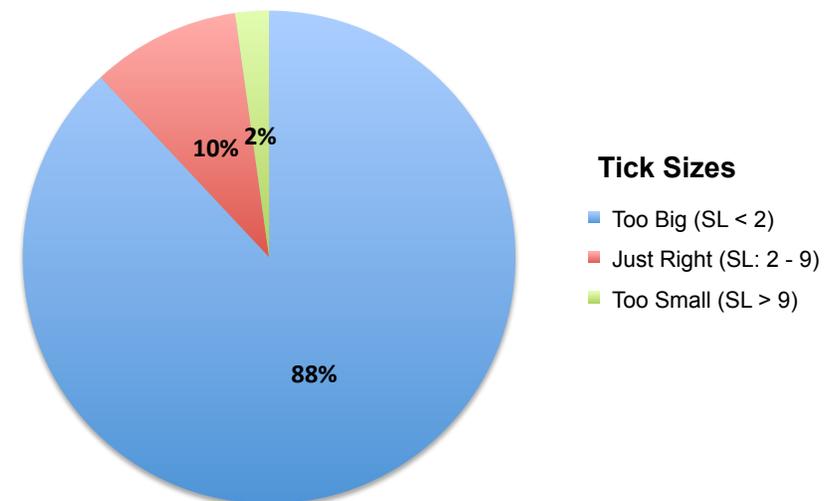
US Equities Review — All Symbols

- Over half of the stocks and ETFs studied tend to trade with a Spread Leeway of less than 2
- This indicates that current increments may be too large and that market quality in those symbols could benefit from smaller (sub-penny) tick increments
- Trading in those stocks accounts for 88% of all shares traded

No of Stocks by Spread Leeway - All

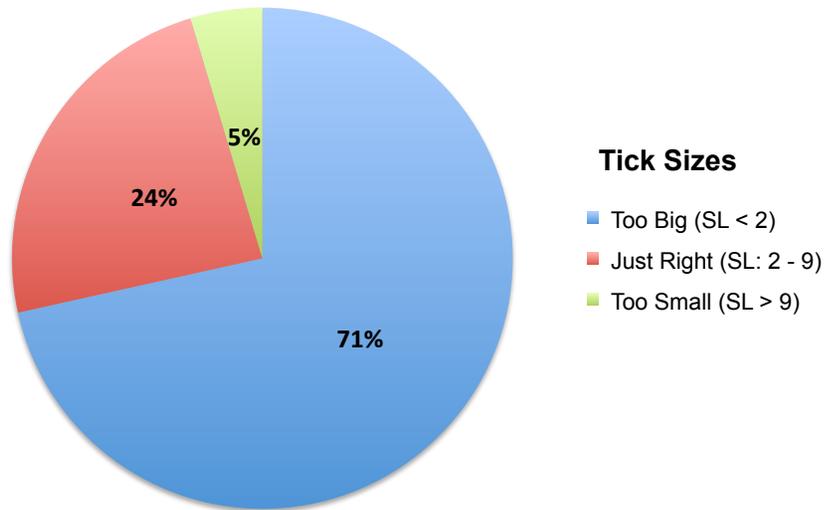


Total Volume by Spread Leeway - All

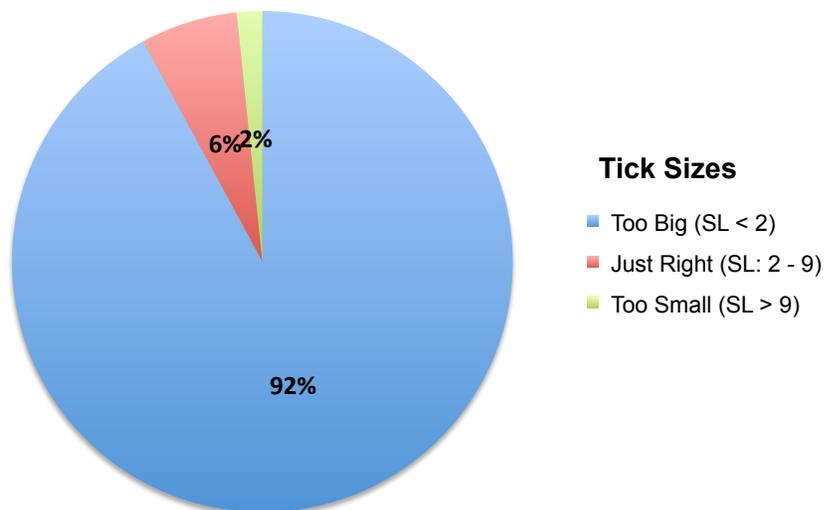


US Equities Review — Large and Mid-Cap Stocks

No of Stocks by Spread Leeway - R1000



Total Volume by Spread Leeway - R1000

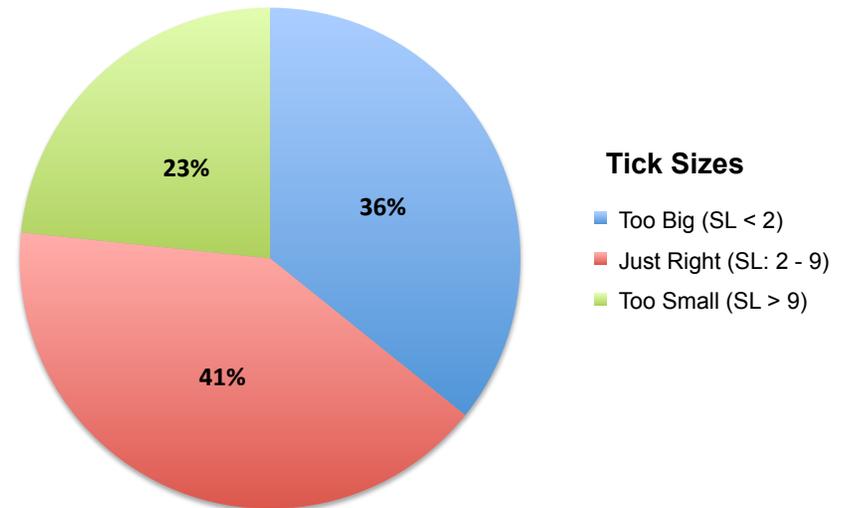


- This situation is more extreme in the large and mid-cap segments
- 71% of Russell 1000 symbols trade with a Spread Leeway of less than 2
- Trading in those shares accounts for 92% of all shares traded

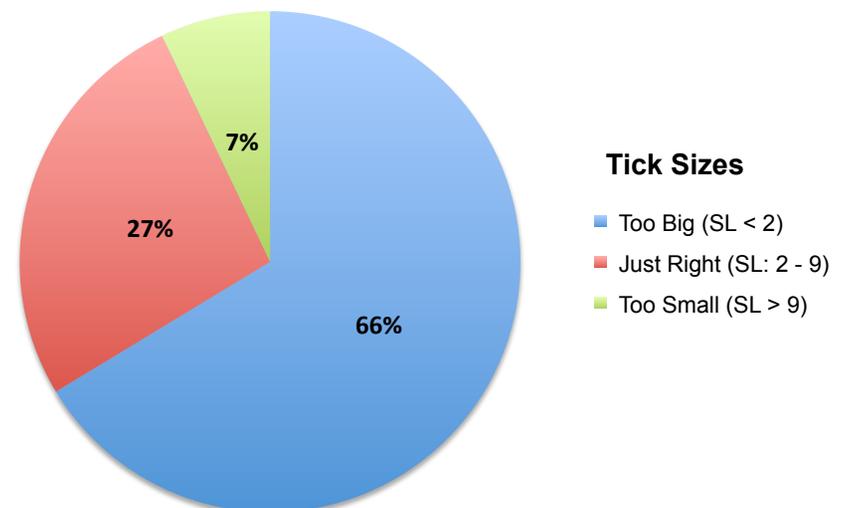
US Equities Review — Mid- and Small-Cap Stocks

- This situation is currently more balanced in the small and mid-cap segments
- 36% of Russell 2000 symbols trade with a Spread Leeway of less than 2
- Trading in those shares, however, still accounts for 66% of all shares traded
- Attention has mostly been focused on this Small-Cap “Too Small” tick segment

No of Stocks by Spread Leeway - R2000



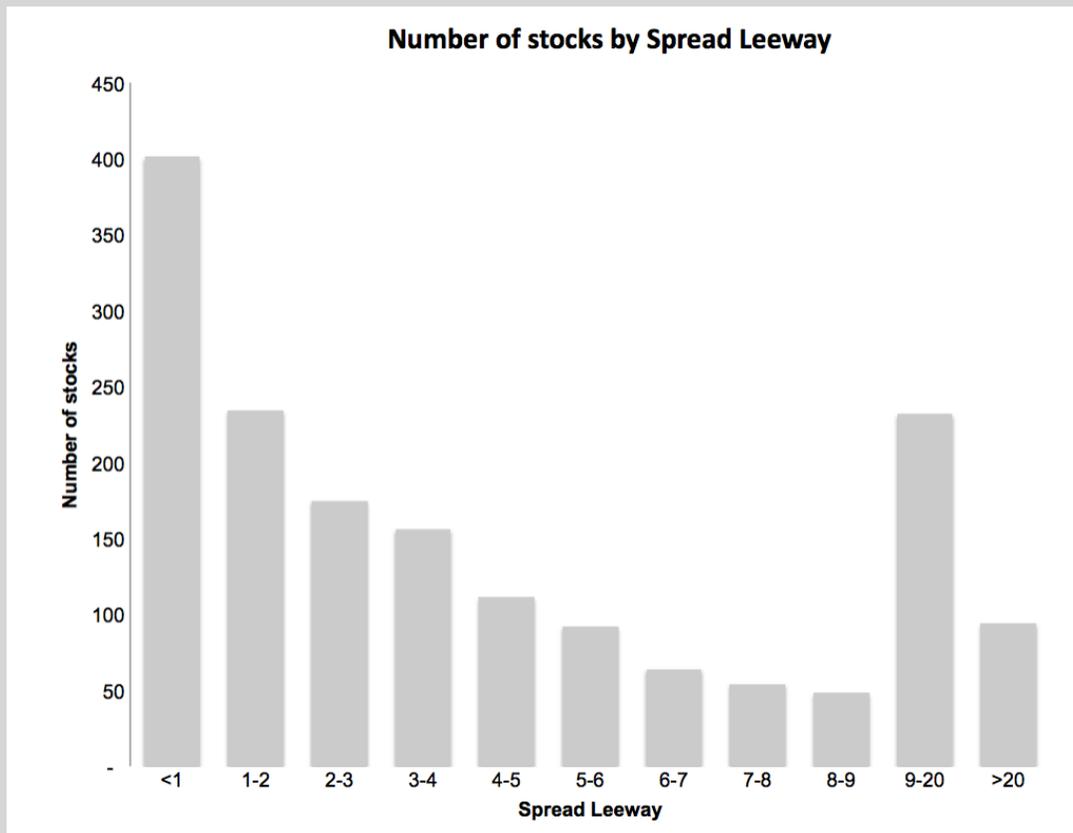
Total Volume by Spread Leeway - R2000



US Tick Size Pilot Program

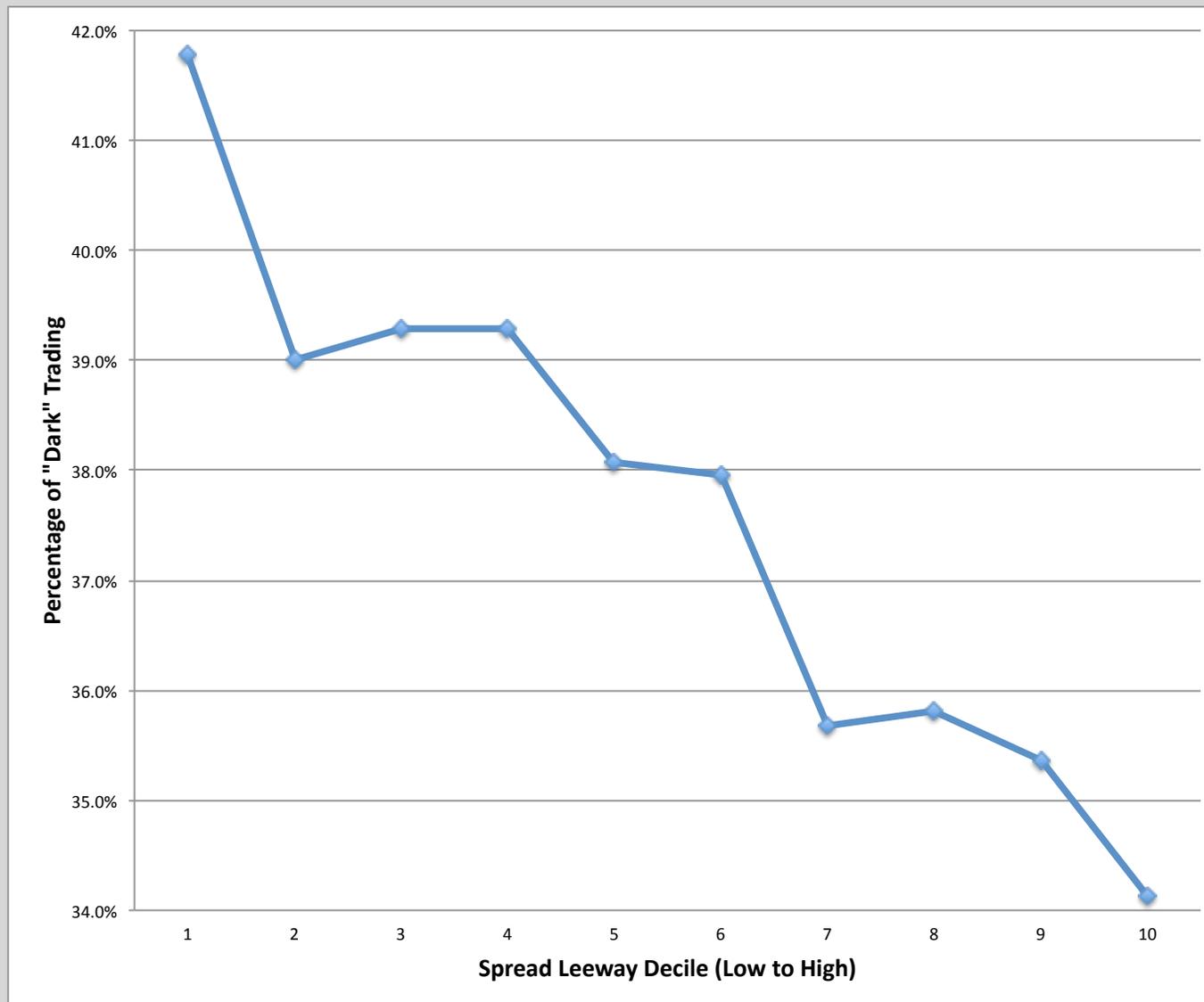
- Selection Criteria
 - market cap of less than \$5BB
 - stock price of greater than \$2 (more or less)
 - one million shares or less traded per day
- 27 categories based on low, medium and high
 - share price
 - market cap
 - trading volume
- Test groups
 - control group
 - nickel quotes with penny trading
 - nickel quotes with nickel trading
 - nickel quotes, nickel trading and “Trade-At” (with 13 exceptions)

Spread-Leeway: Pilot Securities



- Similar to Russell 2000 set
- More balanced distribution than mostly large-cap and liquid set excluded from pilot
- Approximately 2000 symbols would be included
- With nickel ticks, if average spreads stay the same
 - over 80% would have SL < 2 (tick increment “too big”); and
 - almost 50% of symbols would have SL < .2

Relationship between Spread Leeway and “Dark Trading”



Conclusions

- While improvement from our one-size-fits-all regime is certainly possible, setting tick increments is inherently a balancing act with different classes of market participants having different interests and preferences
- *Spread Leeway* is a useful metric to identify the extent to which the bid-ask spread is constrained by the minimum tick increment
- Today, most trading is in highly liquid large cap symbols where the tick increment is arguably “too big”
- The proposed (and rather complex) “Tick Pilot” would create a similar situation for less liquid small and mid-cap stocks selected for “nickel ticks”
- A better way to improve market quality might be, instead, to consider smaller (sub-penny) ticks for highly liquid large cap symbols