April 24, 2012

The Honorable Troy Paredes
Commissioner
U.S. Securities and Exchange Commission
100 F. Street, N.E.
Washington, D.C. 20549-1090

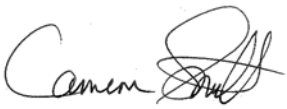
Dear Commissioner Paredes:

In recent years, the Commission has been reviewing a variety of topics related to market structure and has repeatedly expressed an interest in basing its reviews on empirical evidence. As a follow-up to our December 1, 2011 letter, enclosed please find a brief research update to a paper that we originally submitted in connection with the Commission's Concept Release on Equity Market Structure.

This update examines key measures of market quality through the end of last year, a period that included significant macro-volatility surrounding the European debt crisis and U.S. credit downgrade. The data demonstrate that trends toward improving market quality continued in recent periods, despite the macro-economic shocks.

We hope that you find this update to be helpful and welcome your comments, suggestions, and feedback. We would appreciate the opportunity to discuss these studies and issues related to the automated trading sector at your convenience.

Sincerely,



Richard B. Gorelick
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President
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Enclosures

Market Efficiency and Microstructure Evolution in U.S. Equity Markets: A High-Frequency Perspective (March 2012 Update)

J. Castura, R. Litzenberger and R. Gorelick
RGM Advisors, LLC
March 2012

In October 2010, we released a study that explored how various measures of market quality changed in the U.S. equities market between Q1 2006 and Q2 2010.[1] During this period, the markets underwent considerable market structure change, including the implementation of Regulation NMS and increased automated trading. The impact of these various reforms was most dramatic for stocks listed on the NYSE, as that market transitioned from a primarily floor-based manual trading model to a highly electronic, "hybrid" trading model. We presented evidence that U.S. equity markets became more efficient over that period, with tighter bid-ask spreads, greater available liquidity and improved price discovery.

This research note updates the data set to include more recent periods through the end of 2011.[2] This is particularly interesting because of the large macro-volatility spikes during the summer and fall of 2011 when concerns escalated over the European debt crisis and the U.S. credit downgrade. Some observers asserted that the increased volatility during this period was exacerbated by market structure factors, such as changes to short-selling regulations and the prevalence of high frequency trading and theorized that improvements in market quality during previous periods may have reversed.

However, despite the spikes in macro-volatility, our updated research demonstrates that overall market quality metrics did not degrade, and general trends seem to have remained stable, with decreasing quoted bid-ask spreads and stable or improving price efficiency metrics. Available liquidity at the inside has shrunk somewhat over the past year but remains at historically high levels.

Bid-Ask Spreads:

As discussed in our October 2010 paper, bid-ask spreads are a cost to trading and, all else being equal, smaller spreads are evidence of a better cost structure for investors. Conversely, market makers and other liquidity providers earn profits through the spread. To that extent, smaller spreads imply not only smaller revenues for these professional traders but also that these participants, by quoting smaller spreads, are more competitive; a sign of a healthy market.

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[1] Castura, J., Litzenberger, R., Gorelick, R., and Dwivedi, Y., 2010: "Market Efficiency and Microstructure Evolution in US Equity Markets: A High Frequency Perspective", http://www.rgmadvisors.com/docs/MarketEfficiencyStudyOct2010.pdf.

[2] This update and the October 2010 study were based on market data captured from direct exchange feeds from all major U.S. equities exchanges. Further details are available in the original study.

Bid-ask spreads are presented as the mean absolute spread of each of the components of the index, where the absolute spread is defined as the best ask price less the best bid price.

Figure 1 presents the mean of the absolute spread over time for the Russell 1000 stocks partitioned into its NYSE-listed and NASDAQ-listed components. The same information for the Russell 2000 index is presented in Figure 2. Long-term trends showing improved spreads seem to remain intact despite a modest increase in spreads during the summer and fall of 2011 during the period of high volatility around the European debt crisis.

FIGURE 1

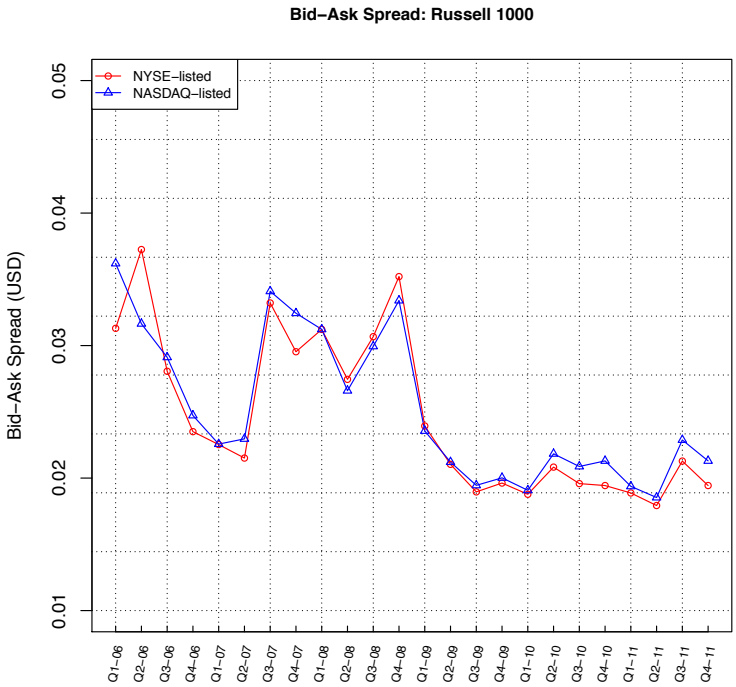
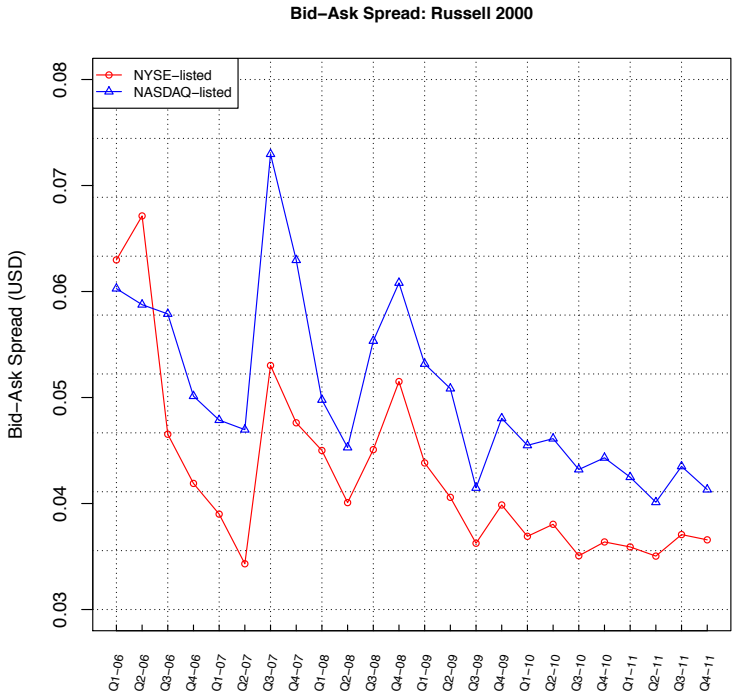


FIGURE 2



Available Liquidity:

Liquidity is loosely defined as the ability of market participants to trade the amount that they wish at the time they wish. Available liquidity is measured as the dollar-value available to buy or sell at any instant in time at the inside bid and ask, and time averages over an entire quarter are taken. Figures 3 and 4 present the available liquidity for the Russell 1000 and 2000 components respectively, partitioned into NYSE-listed and NASDAQ- listed stocks. Although liquidity as measured in this way declined in 2011, it remains at historically high levels. Given the macroeconomic environment of 2011, these levels of liquidity are encouraging.

FIGURE 3

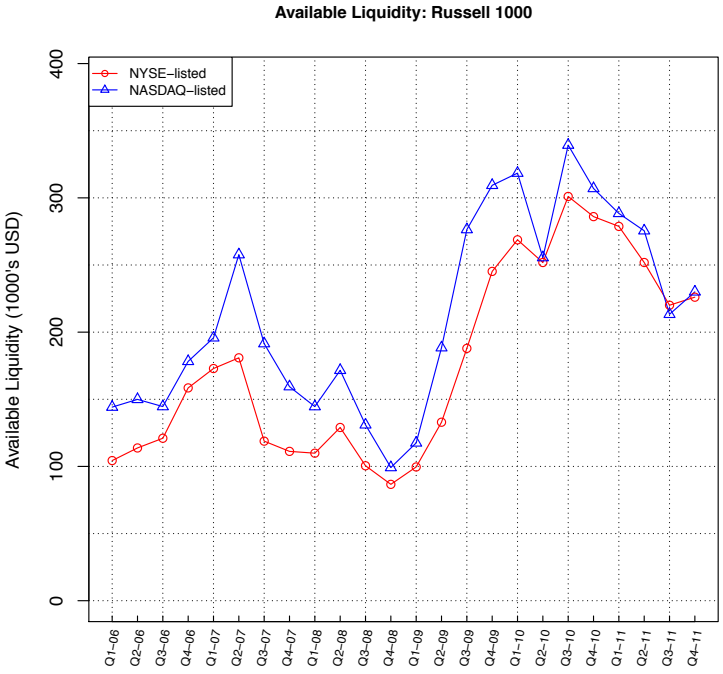
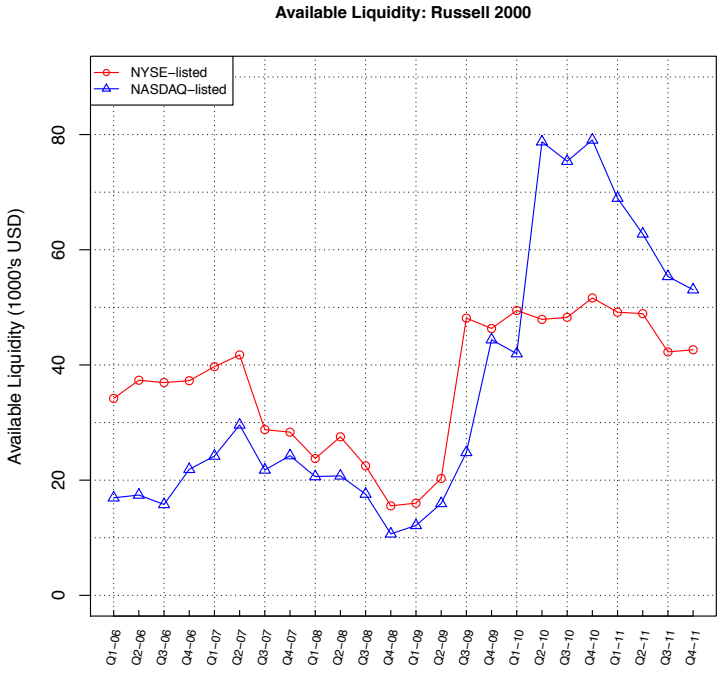


FIGURE 4



Price Efficiency -- Variance Ratios

Price efficiency is the degree to which asset prices are fairly valued reflecting available information. In our October 2010 paper, we explained that variance ratios are commonly used as a measure of price efficiency. The precise calculations are explained in that paper. A value of 1 is indicative of efficient markets with no apparent mean reversion or momentum at the timescales of the measurements, while the distance from 1 indicates the degree of inefficiency. Figures 5 and 6 show variance ratios of 10 seconds over 1 second for midpoint price data from the Russell 1000 and 2000, respectively. These indexes are partitioned into NYSE-listed and NASDAQ-listed stocks.

These variance ratio tests indicate that, even during the periods of high volatility during the second half of 2011, price efficiency as measured in this manner has improved generally across all classes of stocks, with more pronounced improvements in the Russell 2000 stocks. This may suggest growing competition among professional traders in smaller cap stocks. Similar trends are evident in longer-term variance ratios, including those for 600 seconds over 10 seconds.

FIGURE 5

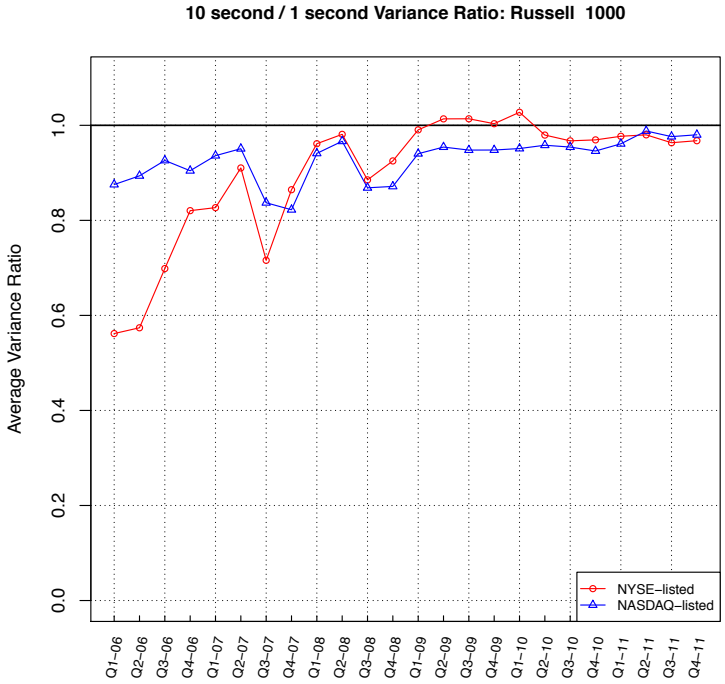
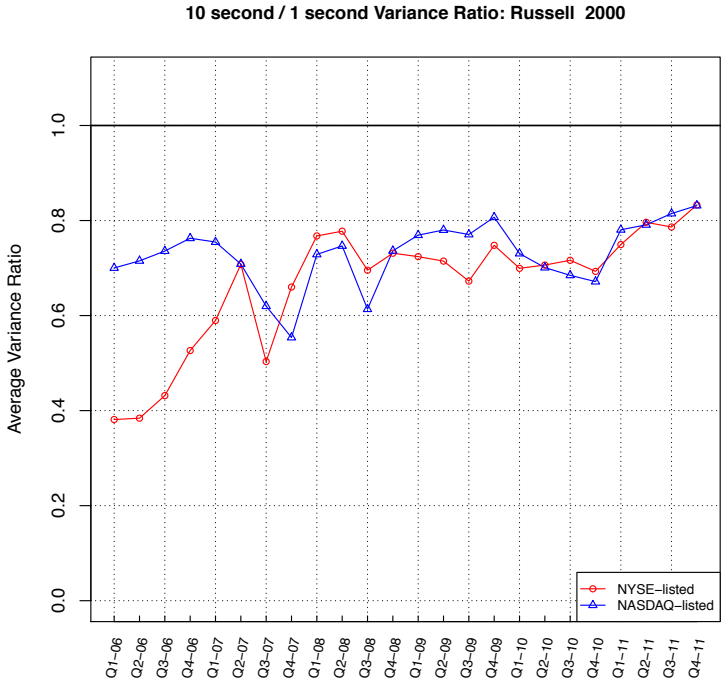


FIGURE 6


10 second / 1 second Variance Ratio: Russell 2000
Average Variance Ratio
0.0
0.2
0.4
0.6
0.8
1.0
Q1−06
Q2−06
Q3−06
Q4−06
Q1−07
Q2−07
Q3−07
Q4−07
Q1−08
Q2−08
Q3−08
Q4−08
Q1−09
Q2−09
Q3−09
Q4−09
Q1−10
Q2−10
Q3−10
Q4−10
Q1−11
Q2−11
Q3−11
Q4−11
NYSE−listed
NASDAQ−listed