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A comparison of volatility and bid–ask spread for NASDAQ and NYSE after decimalization

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Abstract

We compare volatility and transaction costs for National Association of Securities Dealers Automated Quotations (NASDAQ) and New York Stock Exchange (NYSE) firms after decimalization. Using the data of May 2001, our study includes several large samples are matched based on key determinants of volatility and transaction costs. Our findings suggest that volatility on NASDAQ is much higher than on NYSE even after the recent market reforms and decimalization. Transaction costs measured by quoted and effective spreads remain significantly higher on NASDAQ than on NYSE, and these differences cannot be attributed to the differences in the characteristics of the stocks traded in the two markets. In addition, the frequency of small (large) trades inside the quotes is significantly greater (lower) on NYSE than on NASDAQ.

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Notes

[1] Specifically, Bacidore (1997), Porter and Weaver (1997) and Ahn et al. (1998) study the tick size change on April 1996 in the Toronto Stock Exchange. Ronen and Weaver (2001) investigate the changes in minimum tick size on 7 May 1997 in the AMEX. Goldstein and Kavajecz (2000) provide evidence related to the June 1997 conversion of NYSE stocks to sixteenth.

[2] Although the only matching characteristic in Bessembinder and Kaufman (1997) and Bessembinder (1999) is the market capitalization, they do note that their sample of matched NASDAQ and NYSE stocks have quite similar price level and trading volume.

[3] Some argue that matching trading volumes across markets has become an increasingly difficult task because of the changes implemented in reporting conventions after decimalization. Yet, no consensus has been reached as to how to best deal with the changes such as a rising presence of ECN trades and volume (reported differently from trades and volume of market makers).

[4] We also experiment with several other adjustment factors, ranging from 1/0.3 to 1/0.5, and our results are quite consistent across these adjustment factors.

[5] The variables used in forming our matching sample is quite similar to those in Chung et al. (2003) with the exception of that trading volume is used in their paper while we use trade size instead. Nevertheless, judging from the sample statistics, our sample 3 is quite different from the sample of Chung et al. The difference in composition is likely due to the fact that, in addition to minimizing the composite score, we further constrain the difference of each characteristic variable between the chosen NYSE and NASDAQ pair to be less than the average of the two values. Thus, our matching criteria place extra emphasis on the proximity in values for each individual characteristic variable.

[6] Data immediately follow a structural change does not allow time for market to assimilate and may induce biases, our data period, which includes the entire month of May 2001, starts from several weeks after the completion of NASDAQ's decimalization.

[7] Prior studies have shown that spreads and adverse selection costs for non-US stocks are generally higher than those of matched sample of domestic stocks (Bacidore and Sofianos, 2001). Similarly, many studies have presented evidence that liquidity

significantly improves and transaction costs increase after a stock split (Muscarella and Vetsuypens, 1996; Schultz, 2000).

[8] For our samples 2 and 3, dollar spread and percentage spread should provide consistent readings of transaction costs since share prices are similar for our matched pairs.

[9] Lee and Ready (1991) find that 30% of the transactions in their sample occurs inside spread.

[10] Huang and Stoll (1996) find that about 0.4% of transactions take place outside the quote ranges.

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