Journal of Financial Intermediation **11**, 37–60 (2002)
doi:10.1006/jfin.2000.0309 available online at http://www.idealibrary.com on IDEAL®

Implications of a Reduction in Tick Size on Short-Sell Order Execution[1]

Gordon J. Alexander

University of Minnesota, Minneapolis, Minnesota 55455

and

Mark A. Peterson

Southern Illinois University, Carbondale, Illinois 62901

Received Nevember 19, 1999

The U.S. Securities and Exchange Commission is committed to having exchanges fully implement decimal pricing by April 9, 2001, and is also considering revising the Uptick Rule. We consider the likely impact of the pending smaller tick size associated with decimalization on the effica y of this rule by examining the execution quality of NYSE short-sell orders immediately before and after the tick size was reduced from 1/8th to 1/16th in 1997. We conclude that, in general, short market orders will receive better execution after decimalization, but at-the-quote limit orders will receive worse execution, and suggest revisions to the Rule. *Journal of Economic Literature* Classificatio Numbers: G18, K22.

Key Words: short-selling; Rule 10a-1; Uptick Rule; minimum price variation; tick size; quote jumping; execution quality.

In designing a stock exchange, decisions have to be made with regard to the size of the minimum price variation, known as the tick, and the extent to which short-selling should be regulated. In January 1994, the U.S. Securities and Exchange

[1] The authors thank Oliver Hansch, Anjan Thakor, F. Albert Wang, William J. Wilhelm, Jr., the participants at the Finance Department workshop at the University of Miami and the 2000 Journal of Financial Intermediation Symposium on "New Technologies, Financial Innovation, and Intermediation" at Boston College, and the referee for their helpful comments. This work was initiated while the authors were affiliate with the Securities and Exchange Commission. The Securities and Exchange Commission, as a matter of policy, disclaims any responsibility for any private publication or statements by any of its employees. The views expressed herein are those of the authors and do not necessarily reflec the views of the Commission or of the authors' former colleagues on the staff of the Commission.

1042-9573/02 $35.00

Commission (SEC) released its Market 2000 report that recommended a reduction in the tick size of $1/8 that was widely used in the pricing of common stocks.[2] The stated reason behind this recommendation was that the use of $1/8 pricing "... can cause artificially wide spreads and hinder quote competition" (p. 18). Subsequently, the Common Cents Pricing Act was introduced by Representatives Michael Oxley and Edward Markey in the U.S. Congress in March 1997 with the intent of legislating a reduction in the tick size. Shortly thereafter, NASDAQ, the New York Stock Exchange (NYSE), and the other organized exchanges switched to $1/16 pricing (teenies) for most common stocks. This switch reduced the tick size and hence represented a move toward a decimal pricing system like the one adopted by the Toronto Stock Exchange in 1996.[3] Studies such as Bollen and Whaley (1998) and Goldstein and Kavajecz (2000) found that the switch to teenies had an immediate impact on quoted spreads and depths, as predicted by Harris (1994), causing both of them to, in general, decrease.[4]

On January 28, 2000, the SEC issued an order that directed U.S. exchanges and the National Association of Security Dealers (NASD) to implement decimal pricing by July 3, 2000.[5] The SEC subsequently issued an order on June 8, 2000 that gave the exchanges and NASD until April 9, 2001 to finish phasing in the use of decimal pricing.[6]

Under Rule 10a-1, commonly known as the Uptick Rule, short-sell orders placed on organized exchanges cannot be executed on either downticks or zero-minus ticks.[7] This means that a short-sell order can only be executed at a price higher than the price of the previously executed order (i.e., an uptick) or at the same price if that price is higher than the most recently executed order involving a different price (i.e., a zero-plus tick). Basically, the objective of the Uptick Rule is to prevent short-selling into declining markets while not restricting short-selling into advancing markets. The SEC is considering revising the Uptick Rule; one of the alternatives under consideration involves complete elimination of the Rule.[8]

[2] See U.S. Securities and Exchange Commission (1994, pp. 18–19). A minimum tick size of $1/8 was applicable to stocks selling above $1 on the NYSE, $5 on the Amex, and $10 on NASDAQ.

[3] Toronto lowered the tick from $1/8 to $.05 for stocks selling at or above $5, and from $.05 to $.01 for stocks selling between $3 and $4.99. This tick-size change is examined by Bacidore (1997) and Porter and Weaver (1998).

[4] Interestingly, similar results were found by Bacidore (1997) when the Toronto Stock Exchange switched to decimal pricing, suggesting these results are robust across transitions to smaller ticks of different sizes and on different exchanges. The net effect is to make liquidity demanders trading small orders better off while making those trading large orders worse off; see Goldstein and Kavajecz (2000). For a discussion on the economic relevance of the minimum tick size, see, for example, Angel (1997a), Anshuman and Kalay (1998), Chordia and Subrahmanyam (1995), Harris (1991, 1994, 1996), and Hausman *et al*. (1992).

[5] See U.S. Securities and Exchange Commission (2000a). It should be noted that the SEC did not define the minimum tick size in its order for decimalization, preferring to leave this issue to the exchanges.

[6] See U.S. Securities and Exchange Commission (2000b).

[7] For more on the Uptick Rule and its impact on price discovery, see Macey *et al*. (1989).

[8] See U.S. Securities and Exchange Commission (1999).