

associated with these waves of intra-day trading activity, market makers are subject to increased risks that concentrated waves of orders will cause the market to move away. As a result, individual market makers may be unwilling to narrow the current spread and commit additional capital to the market by raising the bid or lowering the offer. When market makers commit less capital and quote less competitive markets, prices can be expected to deteriorate more rapidly. Accordingly, the Commission believes that it is appropriate for the NASD to take measured steps to redress the economic incentives for frequent intra-day trading inherent in SOES to prevent SOES activity from having a negative effect on market prices and volatility.¹¹

f. The Commission does not believe that intra-day trading strategies through SOES contribute significantly to market efficiency in the sense of causing prices to reflect information more accurately.¹²

g. The Commission has evaluated each of the proposed modifications to SOES, and concludes that each of the modifications reduces the adverse effects of active trading through SOES and better enables market makers to manage risk while maintaining continuous participation in SOES. In addition, the Commission does not believe that any of the modifications will have a significant negative effect on market quality. To the extent that any of the modifications may result in a potential loss of liquidity for small investor orders, the Commission believes that these reductions are marginal and are outweighed by the benefits of preserving market maker participation in SOES and increasing the quality of executions for public and institutional orders as a result of the modifications.¹³

h. The Commission * * * has determined that the instant modifications to SOES further objectives of investor protection and fair and orderly markets, and that these goals, on balance, outweigh any marginal effects on liquidity for small retail orders, and any anti-competitive effects on order entry firms and their customers. The Commission concludes that the ability of active traders to place trades through a system designed for retail investors can impair market efficiency and jeopardize the level of market making capital devoted to Nasdaq issues. The Commission believes that the rule change is an appropriate response to active trading through SOES, and that the modifications will reduce the effects of concentrated intra-day SOES activity on the market.¹⁴

The NASD believes these significant statutory findings by the SEC regarding the SOES Minimum Exposure Limit rule and the SOES Automated Quotation Update Feature and the SEC's assessment of the likely benefits to the marketplace that would result from the rules have been confirmed and substantiated by econometric studies on the effectiveness of the Interim SOES

Rules conducted by the NASD's Economic Research Department⁵ and an independent economist commissioned by the NASD.¹⁶ When the SEC approved the Interim SOES Rules, it stated that "[a]ny further action the NASD seeks with respect to SOES—extension of these modifications upon expiration, or introduction of other changes—will require independent consideration under Section 19 of the Act."¹⁷ In addition, the SEC stated that, should the NASD desire to extend these SOES changes or modify SOES, the Commission would expect, "the NASD to monitor the quality of its markets and assess the effects of the approved SOES changes on market quality for Nasdaq securities." Also, if feasible, the SEC instructed the NASD to provide a quantitative and statistical assessment of the effects of the SOES changes on market quality; or, if an assessment is not feasible, the SEC stated that the NASD should provide a reasoned explanation supporting that determination.

In sum, the NASD's study found that:

- Since the SOES changes went into effect in January 1994, the statistical evidence indicated that when average daily volume, stock price, and stock price volatility are held constant through regression techniques, quoted percentage spreads in Nasdaq securities experienced a decline in the immediate period following implementation of the changes and have continued to decline since then. The statistical evidence also showed that the narrowing of quoted percentage spreads became more pronounced and robust the longer the Interim SOES Rules were in effect. In particular, quoted spreads in cents per share for the 500 largest Nasdaq National Market securities experienced a sharp decline from April 28 to May 12 and from June 23 to July 18.¹⁸

¹⁵ See letter from Gene Finn, Vice President & Chief Economist, NASD, to Katherine England, Assistant Director, National Market System & OTC Regulation, SEC, dated October 24, 1994 (letter submitted in connection with the NASD's N•PROVE filing, SR-NASD-94-13).

¹⁶ See The Association Between the Interim SOES Rules and Nasdaq Market Quality, Dean Furbush, Ph.D., Economists, Inc., Washington D.C., December 30, 1994 ("Furbush Study").

¹⁷ Interim SOES Rules Approved Order, *supra* note 2, 59 FR at 69429.

¹⁸ Some press reports have attributed the recent decline in spreads for Nasdaq stocks to the publication, on May 26 and 27, 1994, of newspaper articles in *The Wall Street Journal*, *The Los Angeles Times* and other publications reporting the results of an economic study conducted by two academicians that illustrated the lack of odd-eighth quotes for active Nasdaq stocks. Contrary to these press reports, this study shows that spreads had indeed narrowed before publication of these articles (from April 28 to May 12), stabilized at these

- With the exception of a brief, market-wide period of volatility experienced by stocks traded on Nasdaq, the New York Stock Exchange, and the American Stock Exchange during the Spring, the volatility of Nasdaq securities appears to be unchanged in the period following implementation of the changes; and
- A smaller percentage of Nasdaq stocks experienced extreme relative price volatility after implementation of the rules and that these modifications, in turn, suggest a reduction in relative volatilities since the rules were put into effect.

The Furbush Study also corroborated the findings of the NASD's study. This study found that there was a statistically significant improvement in effective spreads for the top 100 Nasdaq stocks (based on dollar volume) during the three month period following implementation of the rules. Moreover, the study also found that the most significant improvement in effective spreads for the top 100 stocks occurred for trade sizes between 501 and 1,000 shares, precisely the level that was made ineligible for SOES trading by the Interim SOES Rules. In addition, the study found that the average number of market makers for the top ten Nasdaq-listed stocks increased from 44.3 to 46.0, or 3.8 percent, and from 30.2 to 30.9 for the top 100 stocks, or 2.3 percent. Although correlation does not necessarily imply causation, as noted by the SEC when it approved the Interim SOES Rules, the NASD believes that positive market developments clearly have been associated with implementation of the Interim SOES Rules.

The NASD also believes that these studies of the effectiveness of the Interim SOES Rules lend credence to another NASD study that was submitted to the SEC in support of approval of the Interim SOES Rules.¹⁹ In the May 1993 SOES Study, the NASD found that concentrated waves of orders entered into SOES by active order-entry firms resulted in discernible degradation to the quality of the Nasdaq market. Specifically, the study found, among other things, that: (1) bursts of orders entered into SOES by active order entry firms frequently result in a decline in the bid price and a widening of the bid-ask spread; (2) there is a significant

narrower levels from mid-May until June 23, and declined again from June 23 to July 18.

¹⁹ See NASD Department of Economic Research: Impact of SOES Active Trading Firms on Nasdaq Market Quality (May 12, 1993) ("May 1993 SOES Study"). See also Securities Exchange Act Release No. 32313 (May 17, 1993), 58 FR 29647 (publication of the study for comment).

¹¹ *Id.* at 69424-26 (footnote omitted).

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at 69429.