

An hourglass-shaped graphic with a globe inside. The top bulb is dark blue, and the bottom bulb is light blue. The globe is a darker shade of blue. The hourglass is centered on the page.

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*ALTERNATIVE TRADING SYSTEMS: WILL  
COMPUTERS REPLACE STOCK EXCHANGES?*

Mark Jickling, Government and Finance Division

Updated May 27, 1999

**Abstract.** Computer systems that perform all the transaction functions of a traditional stock exchange, called "alternative trading systems" (ATSS), now account for about 15% of U.S. stock volume and are growing rapidly. Benefits to ATS investors include lower trading costs and better information about market conditions. However, traditional exchanges are not just trading mechanisms; they are regulators. There are concerns of a "regulatory gap" - the ATS may not provide the same level of investor protection and market integrity. In December 1998, the SEC issued rules for ATSS: they may now choose to register as exchanges or to be regulated by a new Regulation ATS. This report presents background information on the ATS markets and on the new SEC rules.

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## Alternative Trading Systems: Will Computers Replace Stock Exchanges?

May 27, 1999

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## ABSTRACT

Computer systems that perform all the transaction functions of a traditional stock exchange, called “alternative trading systems” (ATSs), now account for about 15% of U.S. stock volume and are growing rapidly. Benefits to ATS investors include lower trading costs and better information about market conditions. However, traditional exchanges are not just trading mechanisms; they are regulators. There are concerns of a “regulatory gap” — the ATS may not provide the same level of investor protection and market integrity. In December 1998, the SEC issued rules for ATSs: they may now choose to register as exchanges or to be regulated by a new Regulation ATS. This report presents background information on the ATS markets and on the new SEC rules. It will not be updated regularly barring significant legislative or marketplace developments.

# Alternative Trading Systems: Will Computers Replace Stock Exchanges?

## Summary

Recently, the retired head of a large investment bank reflected on the great changes he had seen on Wall Street over his long career. The deregulation of commissions and the shift from partnerships to public ownership were key events, but the changes brought by electronic technology were “a revolution” that, although still in the early stages, “superseded the others infinitely.”

Perhaps the most visible aspect of this electronic transformation has been the rise of Internet trading by small investors. Another change, however, although less publicized, may have a much greater impact on the way stocks are traded. This is the development of “alternative trading systems” (ATSs), computer systems that match buyers and sellers of stocks and execute transactions without the services of traditional brokers or exchanges. Benefits to investors of “cutting out the middleman” include significantly lower trading costs and better information about market conditions and prices. In the long run, competition between ATSs and traditional markets may lower the cost of capital for business.

However, the rise of the ATS raises questions for market oversight. The traditional stock exchange is not just a trading mechanism: under U.S. securities law, it is also a regulator. Exchanges registered with the Securities and Exchange Commission (SEC) are required to make and enforce rules against fraud and manipulation, to treat all participants fairly, and to act in the public interest. Up to now, ATSs have not been required to register as exchanges — their legal status has been as broker/dealers. Accordingly, there have been concerns about possible gaps in investor protection, market integrity and stability, and the absence of regulatory redress for problems that may arise in ATS trading.

In December 1998, the SEC adopted rules concerning the regulation of ATSs. An ATS now has the choice of whether to register as an exchange or to continue to be regulated as a broker/dealer subject to a new Regulation ATS, which subjects an ATS to an increasing level of exchange-like regulation as its trading volume rises. One of the largest ATSs, Island ECN, has indicated that it will apply for registration as an exchange. Many of the largest securities firms, computer companies, and financial data providers have announced plans to launch an ATS.

The House Banking Committee’s Subcommittee on Capital Markets, Securities, and Government-Sponsored Enterprises held a hearing on March 25, 1999 on technology and the financial markets. Several witnesses addressed ATS-related issues. No current legislation is pending, but the subject is an important one for congressional and regulatory oversight.

This report presents background information on the ATS markets and on the new SEC rules. It will not be updated regularly barring significant legislative or marketplace developments.

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# Alternative Trading Systems: Will Computers Replace Stock Exchanges?

The computerization of stock trading is not a new phenomenon. Trade execution, order handling, transaction processing, record keeping, and price dissemination have all become increasingly automated over the past few decades. What is new is that the availability of vast amounts of cheap computing power has enabled these automated systems to take a leap forward. Instead of merely increasing the speed and capacity of existing markets, it is now feasible for privately-owned computer systems to replicate all the trading mechanisms that stock markets provide. They have become, in the jargon, alternative trading systems. Such systems, which match buyers and sellers and execute transactions without the services of traditional intermediaries, now account for almost 30% of trading volume in Nasdaq stocks and may soon handle significant fractions of New York Stock Exchange volume as well.

Alternative trading systems (ATs)<sup>1</sup> can provide improved access to markets and information, longer trading hours, and lower brokerage costs. Competition among markets is beneficial to both traders and the corporations who use the stock market to raise capital. However, the rise of ATs raises questions for market oversight. The traditional stock exchange is not just a trading mechanism; under the Securities Exchange Act of 1934, it is also a regulator. Stock exchanges registered with the Securities and Exchange Commission (SEC) are required to make and enforce rules against fraud and manipulation, to treat all participants fairly, and to act in the public interest.

Up to now, ATs have not been required to register as exchanges — their legal status has been as broker/dealers. Accordingly, there have been concerns about possible gaps in investor protection, market integrity and stability, and the absence of regulatory redress for problems that may arise in AT trading.

In December 1998, the SEC adopted rules concerning the regulation of ATs.<sup>2</sup> An AT now has the choice of whether to register as an exchange or to continue to be regulated as a broker/dealer under a new Regulation AT, which subjects an AT to an rising level of exchange-like regulation as its trading volume rises. One of the largest ATs, Island ECN, has indicated that it will apply for registration as an

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<sup>1</sup>Other terms used, often interchangeably, are “proprietary trading system” (PTS) and “electronic communications network” (ECN).

<sup>2</sup> U.S. Securities and Exchange Commission. Regulation of Exchanges and Alternative Trading Systems. (Release No. 34-40760) *Federal Register*, v. 63, December 22, 1998. p. 70844.

exchange.<sup>3</sup> Many of the largest securities firms, computer companies, and financial data providers have announced plans to launch an ATS. Some observers believe that the eventual impact on the stock market will be revolutionary, comparable to May Day in 1975, when fixed commissions were abolished.<sup>4</sup> The effects on the market, and the implementation of the SEC's new regulations will be important subjects for regulatory and congressional oversight in the years ahead.

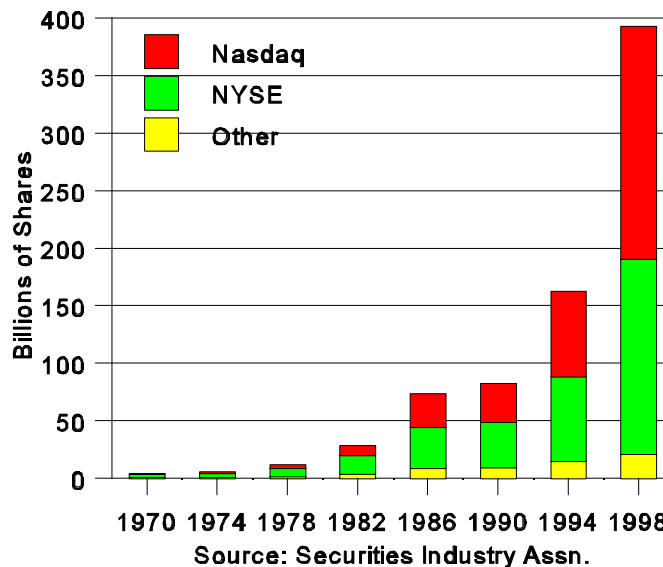
## Background

In the late 1960s, Wall Street was nearly paralyzed by a paperwork crisis. Brokerages' back offices were unable to process the growing volume of trades generated by the "go-go" market of the time. As figure 1 suggests, a whole year's trading then would fit in a slow week in 1999. The rapid and continuous growth in capacity reflects massive investments in automation.

The effect of information processing technology on the market has not been simply to make the existing trading systems faster and more efficient. The stock market has been altered in fundamental ways by several technology-dependent innovations, including derivatives markets, program trading and other computer-driven investment strategies, and global investing.

Similarly, the vast increase in trading volume does not just reflect more (or more active) traders. The rise of institutional investors — pension funds, mutual funds, and others — has had a transforming effect on Wall Street. When institutional investors wished to reallocate their portfolios, the resulting trades were often so large that the traditional NYSE auction market, with a specialist post for each stock, surrounded by a crowd of brokers and traders, was not always satisfactory. Transaction costs were high; in addition to brokerage commissions and specialist fees, institutional orders were often too large for the system to handle smoothly. An order would have

**Figure 1. Annual Stock Trading Volume, 1970-98**



<sup>3</sup>Schonfeld, Erick. Why Island Wants to Be an Exchange. *Fortune*, March 15, 1999. p. 207-208.

<sup>4</sup> See, e.g., Lux, Hal and Jack Willoughby. May Day II. *Institutional Investor*, v. 33, February 1999. p. 45-56.

a “market impact” — the share price would have to rise or fall significantly before the entire order could be absorbed.

Institutional investors had the incentive, the market power, and the financial resources to demand or create alternatives to the NYSE floor. One response was the emergence of the “upstairs” market. Specialized brokers known as block positioners emerged to match institutional buyers and sellers. The transaction would be sent to the floor for final execution, but only after buyers and sellers had agreed on a price. In some cases, large transactions would never go to the floor at all, but would take place directly between the principals: such deals make up what is called the “fourth market.”

The ATS is the product of two factors: (1) the desire of institutional investors to cut trade execution costs and avoid the market impact of their trades, and (2) advances in data processing and electronic technology. The first ATS to have a significant impact on stock trading was Instinet, a system developed in the early 1970s and still owned by Reuters. Instinet became a force in the 1980s, as it developed into a kind of parallel Nasdaq market. Access to Instinet is restricted to members, who are institutional investors and the large securities firms who served as dealers, or market-makers, on the public Nasdaq market. Instinet participants enter their buy and sell price quotations and execute transactions automatically through the computer system. Instinet also offers after hours trading and a market for foreign securities.

Instinet is the largest ATS, with about 20% of Nasdaq volume. Island ECN, the ATS that has applied to the SEC for exchange status, accounts for about 6% of Nasdaq volume. The other dozen or so ATSs in operation today have only a bit more than 2% of Nasdaq volume, but that could change dramatically. ATSs have the potential to attract volume because their transaction costs are very low: Island, for instance, charges a flat fee of 0.015 cents per share traded. In addition, strong competitors to the existing ATSs are likely to emerge. Over the past year or so, announcements of plans for a new ATS have become almost a weekly event, and many of these are joint ventures or investments involving the largest firms in the securities, computer, and telecommunications industries. At the same time, numerous existing exchanges and ATSs, both in the United States and abroad, have announced mergers, linkages, and alliances, all seemingly driven by the new competitive environment created by technology and market forces.

## **Regulatory and Oversight Issues**

The technological revolution that has brought forth the ATS has had obvious benefits for the stock market. Access to the market and market data has improved greatly. Institutional investors have a greater number of investment and execution choices as a result of competition, which has also lowered trading costs and made the market more efficient.<sup>5</sup> Electronic linkages among various markets may advance the

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<sup>5</sup>Market efficiency increases as trading costs are reduced because investors are more likely to react to new information by buying or selling stock — making stock prices more reflective  
(continued...)



goal, established by Congress in the Securities Acts Amendments of 1975 (P.L. 89-29), of a national securities market.

However, the new markets also have the potential to undermine several fundamental goals of securities regulation, including fair and equitable treatment of all market participants and investor protection. Will the rise of the ATS result in a two-tiered market, divided between those with access to private markets and those who can only trade on the public markets? Are the electronic markets susceptible to new forms of fraud and manipulation, and will the ATSS be able to maintain the level of surveillance provided by the traditional markets? In publishing its 1998 ATS rules,<sup>6</sup> the SEC noted two examples that indicate the seriousness of these concerns.

### **The Two-Tiered Market: Instinet and Nasdaq**

In 1994, a price-fixing scheme on the Nasdaq market came to light.<sup>7</sup> Nasdaq market makers had adopted the convention of not using prices that ended in odd-eighths. This meant that the minimum bid/ask spread<sup>8</sup> was artificially maintained at 25 cents per share. As part of the investigation that followed, the SEC turned its attention to the function of the Instinet, the ATS used by institutions and securities firms to trade Nasdaq stocks.<sup>9</sup>

The SEC found that 90% of transactions on Instinet involved Nasdaq market makers, or dealers, and that 85% of the prices quoted over Instinet were better than the prices offered by those same market makers to investors who traded the same stocks on Nasdaq. The “pricing convention” was not followed on Instinet; odd-eighth prices were common. The disparity in pricing could exist because Instinet prices were not reported to the public. In effect, there were two markets: a private one limited to dealers and institutions and a second market where public investors traded at inferior prices. The SEC concluded that the existence of Instinet supported the price-fixing arrangement, because the availability of a private market removed the incentive for dealers to compete on price (by narrowing spreads) on the public market.

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<sup>5</sup>(...continued)  
of the true economic prospects of firms and industries. In the long run, increased market efficiency improves economic efficiency, as the market better allocates capital to its best uses.

<sup>6</sup>Summarized beginning on page 7 below.

<sup>7</sup>See CRS Report 96-214E, *Nasdaq: Investigations and Reform*, by Mark Jickling,

<sup>8</sup>The spread is the difference between the highest price a dealer is willing to pay for a share of stock (the “bid” price) and the lowest price at which he is prepared to sell (the “ask”). Other things being equal, the wider the spread, the greater the dealer’s profit, *and* the higher the customer’s transaction cost.

<sup>9</sup>U.S. Securities and Exchange Commission. *Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the Nasdaq Market*. August 6, 1996. p. 21-22.

In response to the scandal, the SEC approved a package of new trading rules in January 1997.<sup>10</sup> One of these was a requirement that price quotations placed with an ATS also be available to the public. This could be accomplished either by a market maker displaying its ATS quote together with its public quote, or by linking the ATS's bid display to the public quotation system. When the rules went into effect, four ATSs, including Island and Instinet, began to display their bid and ask prices alongside the market makers' quotes on the public Nasdaq trading screens.

## The ATS and Price Manipulation

The new trading rules took effect on January 20, 1997. In June 1998, the SEC filed a cease and desist order against two traders for illegal manipulation of stock prices on January 27 and 28, 1997.<sup>11</sup> The manipulation exploited one of the new trading rules, which required that limit orders for at least 100 shares placed by customers be displayed on market makers' screens if the prices were better than the market makers' own quotes.<sup>12</sup>

The technique of the manipulation was as follows. One of the traders would enter a limit order to sell 100 shares at a price below the best available current quote (the "National Best Bid/Offer," or NBBO). Since limit orders of this size were now required to be displayed to the public, this would effectively lower the NBBO. Then the other trader would place a buy order in the same stock, which would be executed at the lower NBBO price.<sup>13</sup> That done, the first trader would cancel the limit order to sell, and enter a limit order to buy 100 shares at a price above the current NBBO price, again causing the NBBO to rise. Finally, the second trader would sell the shares he had just purchased, and the first trader would immediately cancel the limit order to buy.

The traders were successful in manipulating prices profitably four times, according to the SEC. A fifth attempt failed when the second limit order was filled before it could be canceled, with the result that the newly-acquired shares were sold at the pre-limit price, at a loss.

This particular case involved relatively small amounts of money. (The profits disgorged under the cease and desist order were only \$662.50.) However, this type of trading, which has been described elsewhere as "ECN price manipulation,"<sup>14</sup> could

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<sup>10</sup>U.S. Securities and Exchange Commission. Release No. 34-38156. January 10, 1997. (Collectively referred to as the "order handling rules.")

<sup>11</sup>U.S. Securities and Exchange Commission. *Administrative Proceeding in the Matter of Ian Fishman and Lawrence Fishman*. Securities Exchange Act Release No. 40115. June 24, 1998.

<sup>12</sup>A limit order is an order to buy or sell only at a particular price, as opposed to a market order, which directs the broker to buy or sell immediately at the current price.

<sup>13</sup>Many brokerages guarantee that orders of up to 5,000 shares will be executed at the NBBO price or better.

<sup>14</sup>See letter from Walter Raquet of Knight/Optimark Group to Nasdaq, the SEC, et al., (continued...)

possibly occur on a larger scale. Moreover, it illustrates a recurring problem in market design and regulation: mechanisms or rules intended to prevent one problem can create new loopholes for other kinds of abuse.

## Market Fragmentation

Another ATS-related regulatory concern is market fragmentation.<sup>15</sup> Are there disadvantages to having buying and selling interest dispersed among many markets, as opposed to concentrated in a single exchange? There may be a primary market where prices are set, and a set of satellite ATS markets that generally rely on the primary markets for price quotations. If the secondary markets siphon off volume from the primary market, prices in the primary market may become more volatile, as there are fewer buyers and sellers to absorb large orders. Another way to put this is to say that the primary market suffers a loss of liquidity as trading moves to ATSs, which means that transactions of a given size will have a greater price impact, perhaps reducing the efficiency of the price-setting mechanism.

At present, the SEC does not view market fragmentation as a pressing problem, although it foresees that “over time, an ATS may become the primary market for some securities.”<sup>16</sup> Competition among markets brings offsetting benefits, and the effects of fragmentation are tempered by the trend towards linkages among exchanges<sup>17</sup> and by rules requiring that the best prices be available to all investors. Moreover, moves to prevent fragmentation by regulation would be criticized as attempts to defend those with entrenched interests in the status quo.

A related concern is how the ATS markets would fare in a market crisis such as the October 1987 crash. Since 1987, the NYSE and Nasdaq have been spurred by the SEC to develop their capacity to handle periods of unexpected and unprecedented trading volume. If an ATS which could not afford (or lacked the incentive) to build such excess capacity into its system were to break down in a market crisis, the solvency of ATS customers or market makers might become uncertain. In crisis, uncertainty leads to panic: other market participants might withdraw credit or refuse to deal with such firms, and the perceived problems could become real.

The soaring prices and trading volumes of the current bull market are perhaps the ideal environment for the growth of ATSs. Whether they will prove to be the

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<sup>14</sup>(...continued)

February 7, 1997. On the Internet at <[www.knight-sec.com/knight/regulatory/2797.html](http://www.knight-sec.com/knight/regulatory/2797.html)>.

<sup>15</sup>For a general discussion, see U.S. Securities and Exchange Commission. *Market 2000: An Examination of Current Equity Market Developments*. Washington, U.S. GPO, 1994. Study III.

<sup>16</sup> U.S. Securities and Exchange Commission. Regulation of Exchanges and Alternative Trading Systems. (Release No. 34-40760) *Federal Register*, v. 63, December 22, 1998. p. 70845.

<sup>17</sup>In other words, because market participants value the liquidity provided by a centralized marketplace, there is a centripetal force in securities markets that tends to offset the centrifugal force caused by the search for lower transaction costs, etc.

weak links in the next market plunge, or wither away in a prolonged market slump, is impossible to predict.

## **Gaps in Regulation: Exchange Vs. ATS**

Although ATS markets now offer virtually all the trading services that exchanges provide, they have not been regulated or legally classified as exchanges. Instead, as noted above, they have been registered with the SEC as broker/dealers. Under the securities laws, an exchange has many responsibilities that a broker/dealer does not. For example, a registered exchange must consider the public interest in its dealings, its fees must be reasonable and reasonably allocated, it must establish rules to admit members on a nondiscriminatory basis, it must conduct market surveillance, and its rules must not be anti-competitive. An exchange has governmental powers — it can apply sanctions to its members — therefore its structure of governance is also controlled by SEC regulation. Members of an ATS regulated as a broker/dealer do not have the same regulatory redress available to them. Investors who trade on an ATS may not have the degree of regulatory protection that applies to exchange customers, even though the two trading venues handle transactions in exactly the same securities.

On the other hand, some features of broker/dealer regulation are clearly inappropriate to an ATS: for instance, broker/dealers must join the Securities Investor Protection Corporation, which insures customer funds against broker failure, even though most ATSs never hold customer funds, but simply match buyers and sellers.

The primary intent of the SEC rules issued in December 1998 was to resolve these disparities and inconsistencies.

## **The SEC's New Rules**

The new SEC rules give an ATS a choice: to register as an exchange, and take on all the regulatory responsibilities that apply to the NYSE and other stock exchanges, or to remain regulated as a broker/dealer subject to a new set of regulations. The SEC offers the choice rather than a “one-size-fits-all” regulation “to avoid jeopardizing the commercial viability of these markets.”<sup>18</sup>

### **Redefining “Exchange”**

The first option requires a reinterpretation of the statutory definition of “exchange.” Under the old definition, an exchange was “a marketplace or facility for bringing together buyers and sellers of securities.” The new definition is somewhat more complex: “an organization that (1) brings together the orders of multiple buyers and sellers and (2) uses established, nondiscriminatory methods under which such orders interact with each other.”

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<sup>18</sup>U.S. Securities and Exchange Commission. Regulation of Exchanges and Alternative Trading Systems. (Release No. 34-40760) *Federal Register*, v. 63, December 22, 1998. p. 70846.

The first part of the new definition excludes systems that record orders and route them elsewhere for execution and systems that let investors view the price quotations of and make transactions with a single market maker or dealer. Such systems are considered less than full-fledged ATSs and are not subject to the new rules.

The second part of the definition addresses the “two-tiered market” issue: an ATS registered as an exchange could not simply be a forum where a few securities dealers and institutional investors traded among themselves on terms more favorable than those offered to the public. Instead, access must be provided on a nondiscriminatory basis.

To date, Island ECN is the only ATS to have applied to the SEC to register as an exchange. The process is expected to take at least a year to complete.

## Regulation ATS

Alternative trading systems that wish to continue their legal/regulatory status as broker/dealers now have to comply with a new Regulation ATS, designed to eliminate the shortcomings of regulating an exchange-like entity as a brokerage firm. Under Regulation ATS, an ATS will be subject to an increasing degree of regulation as its trading volume (measured as a percentage of total volume in any of the securities it handles) increases. The essential features of Regulation ATS are as follows:

**I.** An ATS with less than 5% of trading volume in all the securities it lists must:

- file notice of operation and quarterly reports with the SEC;
- maintain various trading records, including an “audit trail;” and
- refrain from using the word “exchange” or “stock market” in its name.

**II.** *In addition* to these minimal requirements, an ATS with over 5% of total trading volume in any National Market System (NMS) security<sup>19</sup> must:

- be linked with a registered exchange in order to disseminate its best-priced orders in NMS securities into the public quote stream; and
- comply with the rules governing execution priorities and obligations that apply to members of the exchange to which it is linked.

**III.** *In addition*, an ATS with over 20% of the total volume in any NMS security must:

- grant or deny access based on objective standards applied in a nondiscriminatory manner; and

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<sup>19</sup>A security whose last sale price is reported via the Intermarket Trading System (ITS), an electronic network linking the 8 registered stock exchanges and the Nasdaq. Thus, NMS securities are all those listed on an exchange or the Nasdaq.

- establish procedures to ensure adequate capacity, market integrity, and contingency planning.

The new rules do not require an ATS registered as a broker/dealer to perform market surveillance. However, the SEC noted that it “intends to work with the self-regulatory organizations [the exchanges and the National Association of Securities Dealers (NASD)] to ensure that they can operate ongoing, real-time surveillance for manipulation and fraud and develop surveillance and examination procedures specifically targeted to alternative trading systems they oversee.”<sup>20</sup>

The rules provide for a “pilot program,” that is, an exemption from regulation for new trading systems for two years. Such systems could be put into operation without prior SEC approval. The exemption, however, does not apply to systems that exceed the 5% volume threshold: they then become subject to the relevant provisions of Regulation ATS.

The rules also specify that U.S. securities laws do not prevent an exchange from reorganizing itself into a for-profit business. (They are now structured as mutual membership associations, but some observers believe that this reflects the 200-year old floor-trading model, where access to the market was limited by physical space constraints.) “Demutualization,” which has been undertaken by several European exchanges, has the potential to lower the costs of market entry and increase competition among markets.

Finally, the rules do not address the question of electronic trading of foreign securities. Technology is available to give U.S. investors direct access to foreign markets. Instinet is already an international trading system: its screens are available in many countries, and carry price quotations for many foreign stocks. However, investors in the United States are not allowed to trade foreign shares that are not registered with the SEC, which requires compliance with U.S. disclosure, accounting, and reporting standards. The SEC continues to weigh the risks to investors of allowing trading of unregistered foreign securities against the competitive interests of U.S. institutions and traders operating in a global market, and has decided to defer the issue for now.

## What Next?

The hearing on technology and financial markets held by the House Banking Committee’s Subcommittee on Capital Markets, Securities, and Government-Sponsored Enterprises on March 25, 1999 provided a first set of reviews for the SEC’s ATS regulations.<sup>21</sup> Witnesses, who included academics, regulators, and exchange and ATS officials, generally agreed that the rules would not impede

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<sup>20</sup>Ibid., p. 70848.

<sup>21</sup>Prepared testimony from the hearing is available at the Banking Committee’s web site: <<http://www.house.gov/banking/32599wit.htm>>. The hearing covered a range of technology-related subjects; not all witnesses addressed the ATS issue.

continued innovation in market design and services. There was no agreement — in fact, few were willing to predict — what the stock market will look like five years from now. All agreed, however, that the transformation of markets by technology is nowhere near complete. Several witnesses mentioned a goal that has yet to be reached: “straight-through processing,” which means that a trade would be ordered, executed, recorded, reported, and paid for (which now takes up to 3 days) in the same instant.

There were few suggestions that innovation had gone too far. Several witnesses suggested the opposite: that obsolete practices were being maintained for the benefit of a few. “Established institutions in the securities industry have regularly and effectively used existing regulation to stifle innovation and competition.”<sup>22</sup> Another witness described the traditional exchange floor/auction trading model as one “which adds unnecessary layers of intermediaries and creates inefficient marketplaces... [by] greatly distancing the ultimate buyers and sellers from the point of transaction.”<sup>23</sup>

Perhaps the central issue in the “computerization” of the stock market is how much of the service provided by traditional intermediaries — exchanges and broker/dealers — adds economic value to the market and the economy. Investors have long since discovered that new communications media can provide them directly with much of the market information for which brokers used to charge: hence the rise of discount brokerage. Other functions, however, are not so easily replaced. Intermediaries provide assurances that securities sold to the public will be of the quality advertised by the issuing corporation, they guarantee that purchased securities will be delivered to the buyer or that payment will be received by sellers, and, finally, in times of crisis they are expected to keep markets open and trading smoothly, even when their pure self-interest would lead them to withdraw from the market.

The logical end of present trends may seem to be to reconfigure the stock market into an Internet auction, where buyer and seller meet directly, and let both beware. However, one witness at the March 25 hearing pointed out that this E-Bay model is fine for a flea market, but not an adequate model for U.S. financial markets.<sup>24</sup> As investors large and small rush towards cheaper trading and direct market access, and as ATS and Internet entrepreneurs strive to accommodate them, it is worth remembering that in the long run the pendulum may swing back the other way. Demands for liquidity may drive markets to consolidate, and demand for market integrity may increase demands for regulated intermediaries who are charged with maintaining fair and orderly markets.

In the meantime, an error or overshooting in either direction can impose real costs on the economy (not just stock market participants) in terms of higher than necessary capital costs for business and less efficient allocation of investment, which

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<sup>22</sup>Statement of William Lupien, OptiMark Technologies, Inc., *ibid.* He describes the ATS rules as “the most significant and positive piece of regulatory structure promulgated in recent years.”

<sup>23</sup>Statement of Howard W. Lutnick, Cantor Fitzgerald, *ibid.*

<sup>24</sup>*Ibid.*

translates into slower economic growth. Therefore, it is appropriate for Congress and the SEC not to stand back and let the chips fall where they may, but to continue oversight and to intervene with new regulation or legislation when required.