

May 2000**ON-LINE TRADING****Better Investor
Protection
Information Needed
on Brokers' Web Sites****G A O**

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United States General Accounting Office
Washington, D.C. 20548

General Government Division

B-283098

May 9, 2000

The Honorable John D. Dingell
Ranking Minority Member
Committee on Commerce

The Honorable Ron Klink
Ranking Minority Member, Subcommittee on Oversight and Investigations
Committee on Commerce

The Honorable Edward J. Markey
Ranking Minority Member, Subcommittee on Telecommunications, Trade,
and Consumer Protection
Committee on Commerce

The Honorable Edolphus Towns
Ranking Minority Member, Subcommittee on Finance and Hazardous
Materials
Committee on Commerce
House of Representatives

The Honorable Carl Levin
Ranking Minority Member, Permanent Subcommittee on Investigations
Committee on Governmental Affairs
United States Senate

This report responds to your requests that we review various aspects of on-line trading. As agreed with your offices, our objectives were to determine: (1) the growth in on-line trading; (2) the extent to which on-line broker-dealers had experienced trading system delays and outages, including the causes of these problems and their reported effect on investors; and (3) how on-line broker-dealers address investor protection issues related to margin, privacy of information, risk disclosures, best execution, suitability, and advertising.

Investors who trade on-line submit orders to broker-dealers electronically through the Internet. This report summarizes information collected from 12 on-line broker-dealers. These firms represented less than 10 percent of the total estimated number of firms that offer on-line trading. However, they accounted for about 90 percent of the on-line trading volume during early 1999.

Results in Brief

On-line trading is a rapidly growing segment of the securities industry. From the last quarter of 1997 to mid-1999, the number of broker-dealers offering on-line trading more than doubled to about 160 firms. Also, the number of on-line trading accounts established nearly tripled to 10.5 million within this time period, and the volume of on-line trades increased to about 37 percent of all retail trading volume in equities and options. Industry analysts expect this growth to continue as more full-service broker-dealers offer on-line trading services to their customers.

This growth in on-line trading has been accompanied by a series of delays and outages in broker-dealers' automated trading systems that have caused some investors to suffer losses or miss investment opportunities. Each of the 12 on-line broker-dealers we contacted had experienced trading system delays or outages. Officials from these firms maintained that several factors caused delays and outages, such as inefficient message routing by Internet service providers, glitches in vendor-supplied systems, and computer hardware and software failures often associated with service upgrades. The officials said that they expect delays and outages to continue because they must constantly upgrade their systems' services and capacity to remain competitive and to keep up with the growth in on-line trading.

The on-line trading industry is new and evolving. Its regulators, the Securities and Exchange Commission (SEC) and the securities self-regulatory organizations (SRO), have issued some guidance on maintaining adequate capacity or notifying their customers about the potential for service disruptions. These regulators have also posted some of this information on their web sites. However, they have not issued final rules in these areas. The most frequent complaint SEC has received concerns investors' difficulty in accessing on-line trading accounts. Requiring that consistent records be kept on delays and outages and investors be informed of the potential for delays and outages could help investors better understand the limitations of on-line trading technology and prepare for delays and outages.

On-line investors have access to extensive financial information through the Internet and other sources, but they are responsible for their own trading decisions in the absence of solicitations and recommendations by a broker-dealer. To help investors make informed decisions, SEC and the SROs require that broker-dealers furnish investors information relating to margin trading, have proposed rules concerning privacy of information, and recommend that broker-dealers also furnish information about trading risks and best execution of trades. These actions are all key investor

protections. However, the broker-dealers that we contacted did not always provide their customers all such information, especially on the firms' Web sites where it would be most useful since this is where investors go to trade on-line. For example, only 4 of the 12 firms we contacted posted information about special margin requirements for volatile stocks on their Web sites for investors to check before making a trade. At one firm that did not post this information, a customer unknowingly placed a trade on a stock that the firm had determined could not be bought on margin. After the purchase, the customer had to pay the total price for the security, which resulted in him owing the firm an additional \$75,000.

Some customers have complained to SEC that they lost money or missed financial opportunities because they did not understand how on-line trading worked. SEC and the securities SROs are responsible for overseeing the securities industry and markets for the ultimate benefit and protection of the investor and each has taken initial steps to monitor the activities of on-line brokerage firms. Ensuring that investors receive appropriate information on margin requirements, privacy considerations, risk disclosures, and trade executions is especially important considering that an estimated 8 million new on-line trading accounts could be opened by the year 2001.

This report contains recommendations that would enhance oversight of on-line broker-dealers in key areas of system capacity, outages and delays, and information disclosure. It also contains information on suitability and advertising issues associated with on-line trading.

Background

On-line trading is transforming the relationships that investors have with broker-dealers. Before 1995, investors typically bought and sold stocks by calling or visiting registered representatives of broker-dealers who executed their orders. Today, nearly 6 million investors buy and sell stocks through the Internet.¹ The services on-line broker-dealers provide their customers have differed from their full-service counterparts, but these differences are diminishing, and both are subject to the same rules and regulations. Their activities are regulated by the regulatory arm of the National Association of Securities Dealers, Inc. (NASD), NASD Regulation (NASDR), and by SEC for the ultimate benefit and protection of the investor. They also may be members of and regulated by the New York Stock Exchange (NYSE).

¹On-line Financial Services Update, U.S. Bancorp Piper Jaffray, September 1999.

The terms on-line trading and day trading are sometimes used interchangeably. Unlike on-line investors, however, day traders have virtually direct access to markets and generally trade more frequently, attempting to profit from short-term movements in stock prices. Although on-line trading differs from day trading, the differences between them are diminishing.

On-line Trading Differs from Full-Service Trading

Trading on-line is typically an experience much different from trading through a full-service broker. Instead of talking to a registered representative about a trade or an investment strategy, on-line investors primarily access their broker-dealers' Web sites through the Internet and order securities trades without assistance from a registered representative. Automating transactions and accepting payment for order flow (as discussed below) allow broker-dealers to charge on-line investors less for trades. The top 10 on-line broker-dealers generally charged their customers commissions that averaged about \$15.75 a trade, for any number of shares less than some specific amount. They might charge more for larger trades, such as those exceeding 1,000 shares. In contrast, full-service broker-dealers generally charge commissions that are based on the size of the order and the dollar value of the transactions. These commission fees can exceed \$90 or more but may be negotiable for customers that have large accounts. As we discuss later, the total cost to trade includes not only the commission charge, but also differences in stock purchase or sale prices that may result from different methods of executing trades. Full-service brokers provide assistance to their customers through registered representatives. Although on-line investors do not generally receive such personal assistance, they do have access to a vast array of financial information, often at no charge, such as market data, historical charts, industry reports, and analyst reports. This information can assist them in making trading decisions. Full-service brokers have provided this information routinely only to high net worth individuals and institutional investors, such as the firms that manage mutual funds and state pension funds.

Broker-dealers that offer on-line trading install an additional layer of computer hardware and software to their trading systems. This layer, called the "front-end system," allows customers to access information on the firms' Web sites and submit orders to the firm for processing. The firms also have internal systems that provide customers the information they request, such as price quotes, as well as deliver messages that confirm their orders have been received and executed. Both on-line and full-service broker-dealers have "back-end" systems that route trading orders to be executed.

On-line broker-dealers are beginning to offer financial services that used to be offered only by full-service broker-dealers. These services include opening mutual fund accounts; trading mutual fund shares, listed options, and fixed-income securities; and access to initial public offerings (IPOs). In addition, on-line broker-dealers now offer new services, such as after-hours trading and pre-opening trading. Also, online broker-dealers are developing software that can provide tailored portfolio and investment advice. Conversely, some full-service broker-dealers have begun to offer on-line services that once only on-line firms provided.

On-line Trading Differs from Day Trading

On-line trading is sometimes confused with day trading. Although on-line investors and day traders both place electronic trading orders to buy or sell stocks, their access to markets and investment strategies differ. Trading on-line provides investors a fast way to place orders with their brokerage firms. On-line investors may use any number of trading strategies designed to profit from either short-term or long-term price movements in the stocks they buy or sell. Day trading, on the other hand, is a more focused strategy used by traders who generally submit trading orders from computers physically located on the premises of a brokerage firm. These traders attempt to profit by buying and selling stock frequently, taking advantage of minute-by-minute price movements. Day traders prefer to start each day with no open positions and end the day the same way, so they do not carry overnight market risk. Although millions of investors trade on-line, industry estimates suggest that there are fewer than 10,000 active day traders.

A significant difference between on-line investors and day traders is their access to the markets. On-line investors access the markets through their Internet service providers and their brokers' order routing systems. This process can take several seconds or minutes, exposing trading orders to fluctuations in stock prices between the time of order entry until its execution. By contrast, day traders have virtually direct access to the markets. Day traders trade at the offices of day trading firms that have direct connections to market centers.² The day trading firms, as on-line firms have begun to do, also generally provide day traders in-depth news and information about the securities markets, including real-time price quotes for stocks. This enables day traders to execute trades attempting to capitalize on anticipated stock price movements. We address day trading issues in a separate report.³

²Market centers include exchanges, Nasdaq, and electronic communication networks (ECNs).

³Securities Operations: Day Trading Requires Continued Oversight (GAO/GGD-00-61, Feb. 24, 2000).

The differences between on-line trading and day trading are diminishing as these industries develop. For example, some on-line broker-dealers now offer their active traders news and price quote services similar to those already provided to day traders; and they offer customized software, such as that used by day traders, for their most frequent users. Also, some day trading firms are providing remote access terminals so that their day traders can trade from home via the Internet.

Scope and Methodology

To determine the extent of recent growth of on-line trading, we obtained and reviewed reports prepared by an SEC commissioner, Gomez Advisors, and Credit Suisse First Boston Corporation. We collected data from the reports on the number of on-line broker-dealers, trading accounts, and trading volume from the last quarter of 1997 through July 1999. We did not verify the accuracy of these reports.

To determine the extent of system delays and outages experienced by on-line trading firms, including the circumstances for these problems, we contacted 12 on-line broker-dealers. We selected these firms primarily on the basis of their market share of on-line trading volume.⁴ Ten of the firms selected represented about 90 percent of the on-line trading volume for March 1999, nearly 500,000 trades a day. We also selected two small firms to determine whether the issues they faced were different from those experienced by large firms. These two firms had a combined market share of less than 1 percent of total on-line trading volume. We asked officials at each firm to provide information on the number of system delays and outages and the reasons for these occurrences. We interviewed industry system professionals at Keynote Systems, Inc., an Internet performance measurement, diagnostic, and consulting firm, to obtain their views on system delays for 11 of 12 on-line broker-dealers in our review. We also used Keynote's data to examine the possible effects of trading system outages and delays. Finally, we obtained and reviewed investor complaints submitted to SEC between January 1998 and June 1999 concerning on-line trading system outages and delays.

To determine how on-line broker-dealers implement investor protections related to margin, privacy of information, risk disclosure, best execution, suitability, and advertising, we discussed these issues with officials from the 12 selected on-line trading firms. We obtained and reviewed SEC and NASD regulations and guidance, and reports. We interviewed senior

⁴Six of the 12 broker-dealers began on-line trading after 1995 and represented 56 percent of the market share of daily on-line trades. The other six firms are subsidiaries of well-established full-service or discount broker-dealers and represented 35 percent of the market share of daily on-line trades. Before 1995, some of these firms offered on-line trading using proprietary software.

agency officials at SEC, NASDR, NYSE, and the North American Securities Administrators Association (NASAA) to obtain their views on the various investor protection issues. Also, we reviewed the Web sites and customer account agreements of the on-line broker-dealers. In addition, we obtained and reviewed 1999 reports prepared by the Office of the New York State Attorney General, From Wall Street to Web Street: A Report on the Problems and Promise of the On-line Brokerage Industry; and by an SEC commissioner, On-line Brokerage: Keeping Apace of Cyberspace. Finally, we obtained on-line trading complaints submitted to SEC between January 1998 and June 1999 to identify problems experienced by investors.

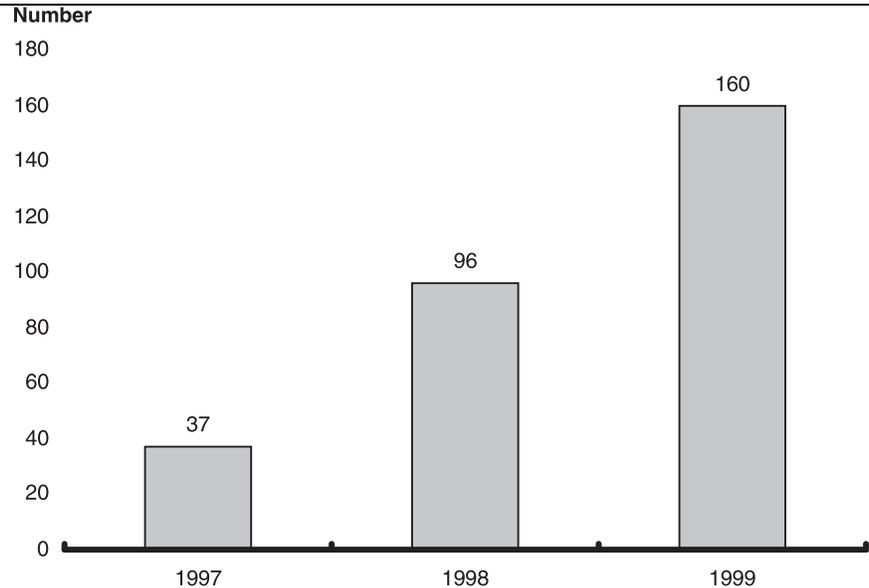
We conducted our work in accordance with generally accepted government auditing standards between June 1999 and February 2000.

On-line Trading Has Grown Rapidly

According to information we obtained from industry analysts and SEC, the number of on-line broker-dealers and trading accounts more than doubled between the last quarter of 1997 and mid-1999. On-line trading accounted for about 37 percent of all retail trading volume in equities and options for 1998. Industry analysts also forecast that the growth in on-line trading will continue.

Broker-dealers are not required to report to SEC or NASD when they offer financial services on-line. As figure 1 shows, however, available information from industry analysts and SEC indicates that the number of broker-dealers offering on-line services grew from 37 in the last quarter of 1997 to 160 by July 1999.

Figure 1: Number of Broker-Dealers with On-line Trading Systems From the Last Quarter of 1997 Through July 1999



Sources: Analysis of information from Gomez Advisors, Inc., and SEC.

Over the same period, the number of trading accounts at on-line broker-dealers also increased significantly. As figure 2 shows, the number of accounts more than doubled from about 4.1 million accounts in the last quarter of 1997 to nearly 10.5 million by mid-1999.⁵ We found no comprehensive statistics to show how many of these accounts were from investors new to securities trading. However, estimates from one study suggest that just over half of 7.5 million new accounts established in 1998 were from investors who converted from full-service or discount brokerage accounts to on-line accounts.⁶ Industry projections show that by 2001, on-line trading accounts could nearly double again to about 18 million accounts.⁷ By then, some of the largest U.S. full-service broker-dealers plan to have implemented on-line trading operations.⁸

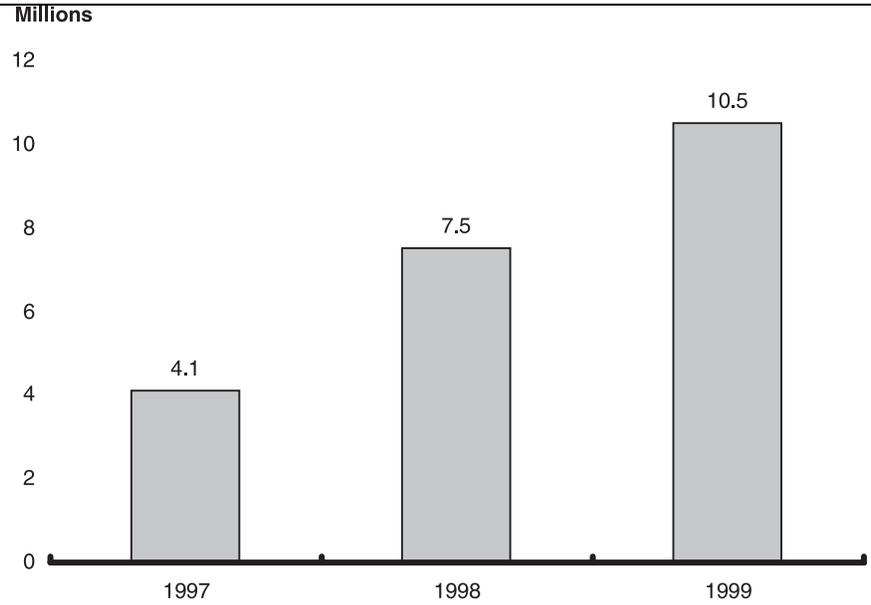
⁵These accounts include only active on-line trading accounts.

⁶Securities Industry Trend, Securities Industry Association, May 1999.

⁷Ibid.

⁸We did not identify how many of the estimated 7,785 broker-dealers nationwide are planning to offer on-line trading to their customers.

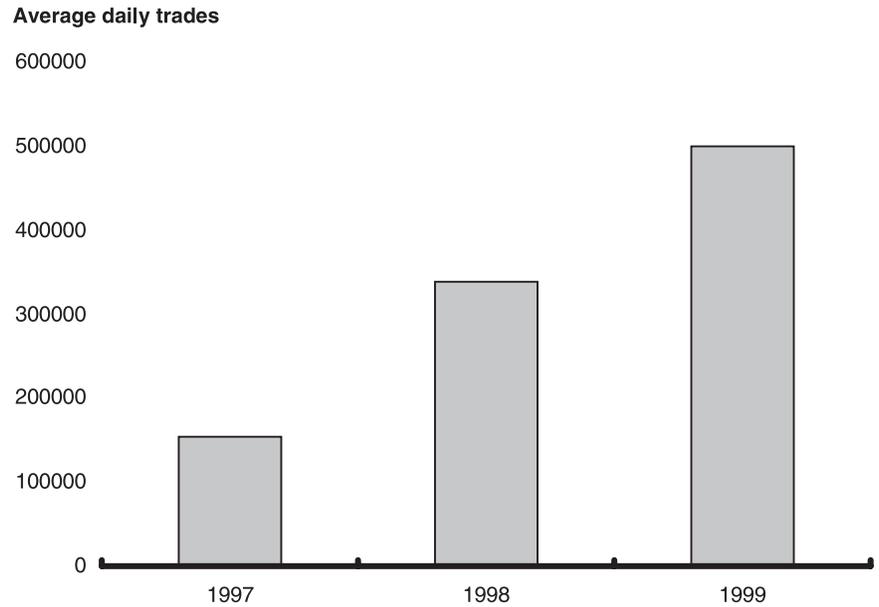
Figure 2: Number of On-line Trading Accounts From the Last Quarter of 1997 to May 1999



Source: Gomez Advisors, Inc.

The rapid growth in the number of on-line broker-dealers and trading accounts is reflected in the increased number of average daily trades by on-line investors. Figure 3 shows that in the last quarter of 1997 the number of on-line trades averaged about 153,000 a day, increasing to about 500,000 trades a day by March 1999. Ten of the 12 on-line broker-dealers in our review processed about 90 percent of all these trades.

Figure 3: Number of Average Daily On-line Trades From December 1997 Through March 1999



Source: On-line Trading Quarterly: 1st Quarter 1999, Credit Suisse First Boston Corporation, June 1999.

An industry report stated that on-line trading orders represented about 37 percent of all retail trades in equities and options for 1998.⁹ According to another industry report, future growth of on-line trades will depend on the features that make on-line trading attractive to investors, such as low commission fees and free company research.¹⁰ The report also cited other factors that could affect future growth, including more broker-dealers offering on-line trading; increased Internet access, which is expected to reach over 225 million people worldwide by the end of 2000; and increased investment of Individual Retirement Account and other retirement funds in the stock market. The report further stated that a strong market could influence on-line trading growth. However, a major market disruption or prolonged downturn could greatly reduce the extent of future trading.

⁹Online Financial Services Update, U.S. Bancorp Piper Jaffray, March 1999.

¹⁰Online Brokerage: Industry at a Critical Inflection Point, U.S. Bancorp Piper Jaffray, October 1988.

System Delays and Outages Were Not Reported

Complaints filed with SEC by customers of the on-line broker-dealers we contacted have stated that they lost financial opportunities because their on-line trading systems experienced delays and outages.¹¹ Although the press reported some of the more significant trading system outages, we could not determine their full extent because securities regulators generally do not require broker-dealers to record or report delays and outages. Officials at each of the on-line broker-dealers we contacted attributed delays and outages to a number of factors, including heavy Internet traffic and problems with vendor trading systems. They said that they expect delays and outages to continue and are taking actions to minimize their effects on customers.

On-line Broker-Dealers Had Trading System Delays or Outages

Officials from each of the on-line broker-dealers we contacted told us that their trading systems had experienced either delays or outages or both. Some said system delays happened more frequently than outages, but they provided us information only on outages.

Without records on the number and extent of system delays, we could not determine the significance of delays. However, in analyzing data from Keynote Systems on the performance of on-line firms' Web sites, we found that delays could adversely affect on-line investors' ability to get their trades executed.¹² For example, we analyzed data from Keynote that measured the average time it would take for investors to enter an order after they had accessed a Web site. Data for a 17-week period from June through September 1999 showed a statistically significant association between average Web page processing speed and the rate of success in submitting an order.¹³ Thus, investors at firms that took longer to enter a trade had a greater chance that their orders either would not be executed or would be executed at an unexpected price. Officials from a broker-dealer that had longer processing times told us their speed was influenced by the type and amount of information contained on their Web sites. They said Web sites with more information take longer to process an order than those with less. However, they said investors may benefit from the information provided. NASD officials told us that the amount of

¹¹Delays occur when customers' access to firms' Web sites or firms' ability to process trading orders is slowed. Outages occur when customers can not access the firms' Web sites or when the firms cannot process trading orders.

¹²Keynote Systems had data for 11 of the 12 broker-dealers in our review. It did not have data for the remaining firm during the time period we reviewed.

¹³Keynote Systems allows each page necessary for order entry to take 12 seconds. For example, if an on-line broker-dealer requires customers to download five pages to enter an order, then Keynote allows a total of 60 seconds for processing. Therefore, an attempt is considered successful if it is processed within the 12 seconds per page time limit.

information on a Web site might determine the length of time it takes an investor to download Web pages, but it should not affect the speed at which the on-line broker processes orders.

Officials from 11 of the 12 on-line broker-dealers we contacted said they monitored trading system outages that prevented their customers from entering trading orders or prevented firms from processing these orders. Officials from the remaining firm told us about one outage but said they had so many outages that they did not keep track of them all. Although this was one of the small firms, officials from the other small firm said they had no outages. In total, officials from 11 firms reported 88 outages between January and September 1999.¹⁴ However, this number may not capture all outages because officials from one firm explained that they track only outages that last 25 minutes or more and affect at least 25 percent of their customer base. Of the 88 outages that firms reported, about 40 percent lasted less than 25 minutes.

Delays and Outages Attributed to Many Factors

On-line broker-dealer officials told us that trading system delays were primarily caused by heavy Internet traffic, especially during times of high market volatility. The most commonly identified reason they reported for trading system outages involved problems with vendor-supplied trading systems. Nearly all the officials from the firms we contacted told us they have excess capacity and that the capacity of their systems has not been a cause of delays or outages, but rather to system upgrades implemented to expand capacity or improve capability.

On-line Trading System Delays Attributed to Problems With Internet Service Providers, Investors' Equipment and Market Makers

On-line broker-dealers, market analysts, and regulators attribute some delays for on-line investors to problems with Internet service providers as well as the investors' own equipment. On-line broker-dealer officials said that they often do not know when customers served by Internet service providers located outside their local area encounter such delays. Keynote Systems officials provided an example of an Internet service provider problem. They said they found delays caused by U.S. Internet service providers that routed messages intended for U.S. broker-dealers through Japan. In addition, SEC's Web site warns investors that they might incur delays because of problems with their own computer equipment, such as slow modem speed.

To a lesser extent, on-line broker-dealer officials attributed system delays to market makers who switch from automated to manual processing of

¹⁴The number of outages the firms reported ranged from 1 to 25.

System Outages Attributed to Vendor Systems and Firm Hardware and Software Problems

trading orders.¹⁵ Market-making officials explained that during periods of abnormal volatility in stock prices and high trading volumes, market makers have the option to suspend automatic electronic execution of trading orders. They said this generally happens when the number of shares that customers want to purchase exceeds shares available in the market makers' inventory. Market makers subsequently shut down their automated systems until they can refill their inventories by buying shares from other market makers. When this happens, delays in filling customer orders may occur at the broker-dealers that originated the customers' orders, whether on-line or off-line. Sometimes these delays can last several hours after customers submit their orders to the broker-dealers.

Officials from 5 of the 12 on-line broker-dealers we contacted said that vendor-operated systems caused most of their outages. SEC staff stated that many on-line firms rely on vendor systems for major parts of order processing; and when these systems experience problems, system outages can result for more than one firm.¹⁶ Generally, vendor systems handle the processing, routing, or execution of trading orders for broker-dealers. None of the firms in our review could provide specific information on the causes of their vendors' system problems. Officials from one firm told us that their vendor does not disclose the factors surrounding trading system problems. An industry report expressed concern about the technical capabilities of vendors that are being pressured by on-line broker-dealers to respond to their demands for faster processing.¹⁷ SEC Staff Legal Bulletin No. 8, issued by the Division of Market Regulation in 1998, recommends that brokerage firms oversee vendors' operations to ensure that vendors adequately address capacity problems.

Officials from four broker-dealers cited hardware problems as another reason for system outages. These problems included failures of new pieces of system hardware and memory caches and incorrect coding of hardware products developed by vendors. To better understand the nature of these problems, we discussed two outages in detail with on-line broker-dealer officials. In each of the cases, human error compounded hardware problems.

¹⁵Market makers are NASD member broker-dealers who quote prices at which they are willing to buy (bid quote) or sell (ask quote) securities for their own accounts or for their customers.

¹⁶SEC identified at least 31 on-line broker-dealers that were electronically linked to a single vendor's trading system.

¹⁷*eBrokerage Quarterly*, BancBoston Robertson Stephens, June 1999.

For example, officials from one firm told us that a major outage occurred when they attempted to implement a significant upgrade to the firm's trading system to speed the routing of investor trading orders. The new piece of hardware functioned properly during simulation testing but failed after 3 days of operation. The firm corrected the problem; but shortly thereafter, another outage occurred when an employee ran a massive report during regular market hours in violation of company procedures. Officials told us that no customer closed a trading account because of these outages.

Officials from another firm told us of an outage that stemmed from a failure of a device that contained customer account information necessary for processing trades. Although they designed the system to contain five other similar devices that would take over should any one of them fail, efforts to repair the initial failure inadvertently disabled these devices. This action prevented customers from accessing 70 percent of the firm's trading system. Officials explained that this outage might have been prevented had the device been installed properly in the first place.

Some broker-dealer officials attributed other outages to software-related problems. For example, officials from one firm described a malfunction in a newly installed software program that was designed to allow 250,000 customers to log on simultaneously. This led to a 90-minute outage shortly after the stock market opened that prevented customers from either accessing their trading accounts or obtaining pricing information on stocks and mutual funds.

Problems Stemming from Upgrades to System Capacity Are Reported As Causes for Outages

Officials from five broker-dealers said the only trading system outages related to capacity have been those that occurred during or soon after system upgrades to expand capacity or improve capability. Officials from 11 of the 12 broker-dealers told us they build excess capacity into their systems.¹⁸ Officials from seven firms told us they have excess capacity ranging from two to five times peak trading volume, based generally on historical or projected trading volume data. Officials from 3 other firms said their total system capacity can handle 1 million trading accounts, or up to 3 times their average daily trading volume. Officials from the remaining firm said that their system could handle up to 100,000 trades a day but is only averaging about 40,000 trades a day.

¹⁸Officials from one remaining firm told us they do not know their total system capacity because the firm relies on its vendor to process its trading transactions.

SEC staff stated that daily trading volume does not provide an adequate gauge of available system capacity during periods of peak usage. They explained that surges in trading volume generally occur during the first minutes after market opening and before market closing. Thus, although a system may be able to process a significant number of trades over the course of a day, it may have difficulty handling large numbers of trades over a short period of time. SEC staff stated that trading system capacity evaluations should consider all uses of a system, both historical and projected, and the system's ability to process such uses.

An SEC staff legal bulletin recommends that broker-dealers establish comprehensive planning and assessment programs to determine system capacity.¹⁹ In addition, the bulletin emphasizes to broker-dealers the importance of having adequate capacity to handle high-volume or high-volatility trading days and conducting capacity planning on a regular basis. With few exceptions, officials from the firms SEC reviewed, as well as the ones we contacted, said they tested their systems regularly, although the frequency of testing varied. Officials from the firms we contacted that did not regularly test their systems said they had vendor systems that processed trades, and they relied on these vendors to ensure adequate capacity.

Not All On-line Broker-Dealers Warned Their Customers About the Potential for Systems Delays and Outages

Securities regulators generally do not require broker-dealers to report system delays or outages. NYSE requires firms to report only those outages that threaten the viability of the firms.²⁰ NASD recommends that firms inform investors of the problems resulting from potential trading system delays and outages.²¹ SEC has added information to its Web site informing investors that technological "choke points" may exist that can slow or prevent investors' orders from reaching their on-line firm. The Chairman of SEC has stated that each on-line broker should completely and clearly explain to investors the limitations of on-line trading technology and their effects on placing and executing orders. He stated that it would be useful to investors if firms' Web sites better explained to

¹⁹In 1989 and 1991 respectively, SEC issued two Automation Review Policies. Automation Review Policy I states that self-regulatory organizations, on a voluntary basis, should establish comprehensive planning and assessment programs to determine system capacity and vulnerability of trading systems. Automation Review Policy II provides guidance on the type of independent review that should occur in overseeing capacity planning.

²⁰NYSE Rule 401 states that members must report system problems if they could lead to capital, liquidity, operating problems, or impairments in recordkeeping, clearance, or control functions. To help track system outages, NYSE recently added an "on-line trading" category to reports of customer complaints that member firms are to file quarterly.

²¹NASD Notice to Members 99-11 and 99-12.

customers the possibility of system delays and outages. By better informing investors of the points at which their orders may be delayed, investor expectations would be more consistent with the capabilities of technology. He added that these disclosures would be useful to investors only if they are readily visible on brokers' Web pages. Also, investors might be better able to minimize or avoid the disruptions to their trading that delays and outages might otherwise cause.

Eight of the 12 on-line broker-dealers we contacted notified their customers of the potential for delays and outages. These firms either explained the types of circumstances that could cause delays or outages and possible financial loss or provided a link to NASDR's or SEC's Web sites, which also contained this information.²² One firm recommended that its customers open an account with a competitor to avoid trading disruptions should a delay or outage occur. The remaining four firms either did not notify their customers or did not provide clear notices. For example, two of the firms stated that system response time may vary due to a variety of factors, such as trading volume, market conditions, and system performance.

The most common investor complaint to SEC about on-line trading concerned difficulty in accessing the Web sites of broker-dealers. (See app. I.) Many investors reported lost financial opportunities. For example, one on-line investor said that he lost up to \$6,000 in his 2-day unsuccessful effort to submit a sell order through one of the major on-line firm's Web site. Officials from two on-line broker-dealers said they made efforts to compensate their customers for losses due to outages. These officials told us they reimbursed some customers over \$1 million in commission credits and trade adjustments. SEC staff said that many firms have refused to provide compensation for their customers' losses in this regard.

Firms Expect Delays and Outages to Continue and Are Making Contingency Plans

Officials from several large on-line broker-dealers told us they anticipate that trading system outages and delays will continue as firms expand or upgrade their systems. According to these officials, frequent trading system upgrades have been necessary to compete with other on-line broker-dealers and to keep up with the growth in on-line trading. For example, officials from one firm said they made over 600 changes between January and June 1999. Officials from each of the firms said they are providing alternative means of order entry to reduce the effects of outages

²²In its comments on a draft of this report, NASDR indicated that it has just completed development of a new Web page directed to on-line investors that includes information about the mechanics of on-line investing and margin, among other matters.

on their customers, including call centers, touch-tone services, or redundant trading systems.

Officials from 8 of 12 on-line broker-dealers we contacted said they use call centers as their primary backups should on-line systems fail. SEC staff have questioned whether, in the event of a system outage, broker-dealers' call centers have sufficient capacity to process normal on-line trading volumes. Officials from 5 of the 12 firms reported that they are planning to build new call centers.

Officials from two broker-dealers said they use secondary or redundant on-line trading systems as their primary backups. They explained that should one system fail, another system would handle all the transaction processing. Officials from five other firms told us they were building, or planning to build, redundant trading systems.

On-line Brokerages' Web Sites Lack Information on Trading Risks, Rules, and Procedures

To help investors make informed decisions, SEC and the SROs require that on-line broker-dealers furnish investors with information relating to margin trading, have proposed requirements for privacy of information, and recommend that broker-dealers also furnish information about trading risks and best execution of trades. These are key investor protections. However, the on-line broker-dealers that we contacted did not always provide their customers all such information, especially on the firms' Web sites, where it would be most useful for investors trading on-line. Most of the on-line broker-dealers provided some information on their Web sites to educate investors, but officials from one firm said they did not want to overwhelm their customers with information; and others said they had to work through a burdensome process with vendors to provide this information. Some customers have complained to SEC that they lost money or missed financial opportunities because they did not understand how on-line trading worked.

SEC and SROs are also addressing other information issues that might affect on-line investors. As on-line broker-dealers provide investors information tailored to their individual needs, they get closer to becoming responsible for determining if these investments are suitable for their customers. SEC is reviewing which activities might require suitability determinations. Also, SEC and SROs require that advertising for on-line broker-dealers be fair and honest and not mislead customers. Some broker-dealers have withdrawn advertisements that the regulators found misleading.

Investors Are Not Always Provided Margin Information on Brokerages' Web Sites

The regulations governing the information to be provided to investors on margin trading—buying stocks using money borrowed from a broker—are the same for investors who trade on-line as they are for investors who trade through full-service brokers. However, investors who are trading on-line do not normally use a registered representative who might help explain the risks or rules of margin trading. Some on-line broker-dealers have personnel available to discuss margin rules by telephone. An SEC commissioner reported, with many broker-dealers SEC contacted in agreement, that the most effective means to educate on-line investors would be on the firms' Web sites. All the on-line broker-dealers we contacted provided their customers required information on margin trading, but many did not provide all of that information on their Web sites. SEC has determined from its customer complaints that many investors who traded on-line did not understand margin requirements.

Margin regulations for securities trading specify the maximum amount of borrowing, or leverage, allowed by investors (usually 50 percent). For example, an investor with \$5,000 cash in a brokerage margin account would be allowed to borrow a maximum of an additional \$5,000 from the brokerage firm for total stock purchasing power of \$10,000. In return, the investor would pay interest on the amount loaned from the brokerage firm. Although margin trading allows investors additional purchasing power, it also has additional risks because of the leverage it provides. For example, investors who borrow on margin and buy twice as many shares can suffer twice the losses if stock prices fall. Also, margin regulations allow brokerage firms to sell investors' stocks the firms hold as collateral for margin loans should the value of the stocks fall below a certain level. Consequently, investors must provide additional collateral quickly or risk having the firm sell the investors' stocks to pay back the loan. Margin regulations also require broker-dealers to disclose their policies and procedures regarding margin trading that might affect investors' accounts.

The lack of sufficient disclosure on when firms would sell securities in a margin account to cover margin loans was among the leading margin-related complaints that SEC received.²³ All of the on-line broker-dealers we contacted provided their customers some type of information on margin trading, such as requirements for account opening, procedures for selling securities to cover account losses, or special requirements for volatile

²³This situation could occur when the value of cash and securities in an investor's margin account falls below brokerage firm maintenance margin requirements (usually 30 to 50 percent at on-line brokerage firms). Broker-dealers have the legal right to sell the investor's securities to bring the account back to the maintenance margin requirement at any time without consulting the investor, although firms generally inform investors of an immediate need to replenish their accounts, called a margin call.

stocks. However, nearly half of the firms automatically opened margin accounts for new customers without informing them of the risks and benefits of margin trading. Those that provided clear indications of the type of account to be opened offered their customers the option to choose either cash or margin accounts, or both, on the Web site. The other firms offered only the choices of ownership, such as a joint or individual account, that all the firms offered. These broker-dealers automatically opened margin accounts; at three firms, customers would find out about their account type only if they read and understood their account agreements, which SEC staff stated are written in legal language and may be too difficult for investors to understand.

Three of the 12 on-line broker-dealers we contacted took extra measures to ensure that their customers understood that stocks could be sold to cover outstanding loans in a margin account. The three firms included information on their Web sites that explained accounts could be liquidated in fast-moving markets before the customary 3-day period given to investors to replenish their margin account collateral. At one firm that did not take extra measures to inform its customers, a customer complained to SEC that the firm sold stock in his account without his knowledge before the 3 days he thought he had to cover his margin obligation.

Each of the 12 on-line broker-dealers we contacted had margin requirements higher than 50 percent for volatile stocks, and nearly all of them considered some stocks too volatile to be traded on margin. However, only 4 of the 12 firms we contacted posted information about special margin requirements on their Web sites for investors to check before making a trade. The remaining eight firms did not post this information. Officials from two of these firms said that investors could telephone the firms to obtain this information before making a trade. Officials from the other six firms said that customers would find out about these special requirements when the firms asked them for money after the trades were made. One investor complained to SEC that he received a call from his firm that he owed the firm \$75,000 after he unknowingly placed a trade on a stock that the firm did not allow to be bought on margin. Officials at one firm told us that they were trying to improve their customer service in this area.

On-line Brokerages Did Not Generally Inform Investors About the Privacy of Their Data

Under the Gramm-Leach-Bliley Act adopted in November 1999, SEC has proposed rules to require broker-dealers to provide investors with a notice of their privacy policies and practices. The rules also describe the conditions under which broker-dealers may disclose nonpublic personal information about a consumer to nonaffiliated third parties.²⁴ The act also requires broker-dealers to implement procedures to protect the privacy of nonpublic customer information. SEC's examination of 38 on-line firms found that these broker-dealers implemented a variety of measures to address customer privacy and confidentiality. However, on-line investors have complained to SEC that their broker-dealers inappropriately released personal account information.

Nine of the 12 on-line broker-dealers we contacted included information about the firms' privacy policies on their Web sites.²⁵ However, at the time of our review, the privacy policies generally stated only that the firms do not rent or sell customer information to independent vendors. Officials from four of these firms said they might share this information with affiliated vendors offering related financial services that might be of interest to their customers, such as mortgage companies, banks, and mutual funds.

Also, three of the on-line broker-dealers generally provided their customers information on how the firms internally use customer data, on whether customers have a choice about how the firm uses their data, and on what procedures firms use to protect the confidentiality of the data. The remaining nine firms had not yet provided such information to their customers.

To determine how well on-line broker-dealers protected customer information, SEC reviewed the adequacy of password protections adopted by on-line broker-dealers.²⁶ It found that all of the firms used at least one level of password protection to restrict access to their on-line trading systems. This level of password protection requires a customer on a firm's Web site to enter a password before gaining access to the trading site. Few firms required customers to periodically change their passwords. SEC also found that five on-line broker-dealers used a second level of password

²⁴Financial data can be gathered on-line from customers or from potential customers, which then could be used for possible marketing purposes. For example, financial information obtained by broker-dealers may provide allied businesses opportunities to solicit customers for potential banking services.

²⁵Officials from the three remaining broker-dealers told us they did not yet have written policies in place, but were using informal internal policies.

²⁶SEC also reviewed other security measures, such as the use of firewalls and encryption.

protection that requires the customer to enter another password to submit a trading order. SEC staff concluded that double-layer password protection can reduce the likelihood that trades will be either accidentally or intentionally entered without the customer's consent. However, they said even these protections can be overcome by computer hackers.

In addition, SEC found that 22 of the 38 on-line broker-dealers it examined tested the efficacy of their security systems on preventing unauthorized access. The firms either conducted their own tests or contracted with outside security consultants. Some tested their systems daily or when system changes occurred. SEC staff stated that without regular and comprehensive testing, broker-dealers could not ensure the integrity of their on-line trading systems for use by the public. However, recent events showed that even testing may not make brokers' systems immune from outside disruption. In February 2000, some of the major on-line broker-dealers' systems were targets of attacks by hackers on a number of popular Web sites. These attacks, called denial of service attacks, made the on-line brokers' trading systems unavailable to their customers for as much as an hour or more.

SEC and NASDR are addressing investor complaints involving inappropriate securities trading, misuse of personal information, and unauthorized access to trading accounts. Some of these complaints involved four on-line broker-dealers in our review. For example, one customer reported that his firm gave him a user identification number and password to gain access to his trading account. However, the account accessed using this information belonged to another customer and contained over \$400,000. In their customer agreements, some on-line broker-dealers specify that should theft or other financial loss occur due to breaches in security or confidentiality, they may not be held liable regardless of who the responsible party is. SEC staff told us that arbitrators or the courts would ultimately determine the validity of such disclaimers.

On-line Brokerages Did Not Always Disclose Risks Related to On-line Trading on Web Sites.

NASD and SEC recommend that on-line broker-dealers inform their customers about the various risks of securities trading, such as the differences between limit and market orders,²⁷ the effect of these different orders on trade executions, and the effects of trading volume on trade executions. SEC staff stated that investors need this information to fully

²⁷With a limit order, investors can establish the maximum price they are willing to pay for a stock or the minimum price at which to sell the stock. With a market order, the trade is executed as fast as possible without regard to price.

understand the risks of on-line trading or of securities trading in general. The firms we contacted provided some of these disclosures, but they disseminated the information in various ways and did not always include it on their Web sites.

Seven of the 12 on-line broker-dealers we contacted generally disclosed information to their customers in each of the recommended categories, either on their own Web sites or by providing a link to the Web sites of securities regulators, which also contained this information. Three firms provided their customers some, but not all, of the recommended disclosures; and two—one small and one major firm—provided no disclosures to their customers on their Web sites. Officials from one of these two firms told us that because they had to work with a vendor, it was too burdensome to have this information placed on their Web site. Officials from the other firm told us that they mail this information to their customers.

All of the 12 on-line broker-dealers we contacted provided customers other information about securities trading on their Web sites. For example, some firms offered a glossary of investment terms, answers to frequently asked questions, letters and speeches by regulators, and links to guides on personal investing. Other firms provided more extensive education programs for their customers. One established an “institution for higher learning” on its Web site and offered a free on-line curriculum about securities investing. Another provided simulated trading accounts for practice in on-line trading.

Despite these efforts, SEC staff told us many on-line trading complaints came from investors who lacked knowledge about securities trading. For example, SEC staff said that they received many complaints from investors who wanted to know more about initial public offerings (IPO), especially how firms allocated IPO shares and the total amount of shares available.²⁸ SEC staff stated they are planning to offer guidance to on-line broker-dealers on disclosure of IPO allocation and on-line distribution methods. SEC staff also stated that broker-dealers offering IPO shares to on-line investors should provide clear and meaningful disclosure about the on-line distribution of IPO shares, including their allocation methods and any restrictions on share distributions. The eight on-line broker-dealers that offered IPOs did not generally provide information on their allocation methods, the probability of any one customer receiving shares, or the

²⁸An IPO is a firm's first offering of stock to the public. IPOs appeal to investors because in recent years the prices of some IPOs have risen rapidly on the first day of trading.

number of shares to be allocated to the firms. Instead, some of these broker-dealers informed investors that a limited number of shares were available or presented data on the total number of shares offered to the industry as a whole. SEC staff have stated that investors, especially those new to trading, could mistakenly assume that the on-line brokerage firm had sufficient IPO shares available for purchase.

Some On-line Brokerages Had Problems Ensuring Quality Execution of Trading Orders

The 12 on-line broker-dealers we contacted generally routed their customers' orders to third-party broker-dealers who guaranteed to fill the orders at the best prices available at the time they were received or at least the national best bid or offer (NBBO) price.²⁹ As a result, the quality of the execution of their trades was dependent on the third-party broker-dealer. Determining whether investors were getting the best possible executions of their orders was difficult because the quality depended on a number of factors, such as price, speed, and the likelihood of execution. SEC, NYSE, and NASD require broker-dealers to obtain the best execution reasonably available under the circumstances for their customer orders, and SEC's review of the execution practices at 29 on-line broker-dealers indicated that over half were not meeting their duty to ensure best executions. SEC sent deficiency letters to those firms that failed to meet their best execution obligations to get the firms to take corrective actions. On-line investors can take steps to ensure quality trade executions, such as specifying where they want their trade to be executed, but eight firms we contacted did not provide this information to their customers. SEC staff said that this may require customers to call the firm to specify where they want their order executed. They also said that this is a very complex issue, and a typical investor may not currently know how to make this decision. Officials from one firm said they did not want to overwhelm their on-line customers with information on the Web site. Those from another firm said this issue is complicated, and if customers needed more information they could call the firm.

On-line Broker-Dealer Customers Do Not Have Direct Access to the Markets

When customers submit orders to on-line broker-dealers, the firms decide where to send the orders. They can send the orders to exchanges, such as NYSE, Chicago, or Philadelphia; Electronic Communications Networks (ECN), which electronically link buy and sell orders; or over-the-counter market makers. The on-line firm itself could also act as a market maker and execute the orders out of the firms' own inventory—known as

²⁹The best bid is the highest priced buy order, and the best offer is the lowest priced sell order in the market at a point in time. Although NYSE and Nasdaq are the primary market centers for stock trades, trades can also occur in other marketplaces. For example, Electronic Communication Networks (ECNs) traded nearly 10 percent of the volume of Nasdaq-listed stocks as of March 1999. The best buy and sell prices listed on any of these marketplaces would be the NBBO.

internalizing order flow. The on-line firm could also route orders to its clearing firm, which would generally execute orders from the clearing firm's own inventory or through other firms that quote prices to buy and sell particular stocks.

Ten of the 12 on-line broker-dealers we contacted said they routed the majority of their customer orders for Nasdaq-listed stocks to market makers. Officials from five firms said they used a single market maker, the rest used as many as nine market makers. The particular market maker chosen depended on parameters programmed into the firms' trading system software, such as the type or size of the order or payment for order flow. Three firms routed Nasdaq orders to ECNs. The 12 firms generally routed NYSE-listed orders to either the Chicago or Philadelphia Exchanges, or both.

When third-party firms or exchanges receive orders from an on-line brokerage firm, they generally fill the orders from their own inventories at NBBO prices. Although this price is the best price displayed at the time of the order, it may not be the best price available at the time of the trade. Because the orders are filled internally, other market participants, such as market makers or specialists, do not see them and, thus, do not have a chance to better the NBBO price. SEC staff stated that routing order flow for execution at the NBBO does not necessarily satisfy a brokerage firm's duty of best execution for retail-sized orders.³⁰

SEC Has Found Problems With Broker-Dealers Meeting Best Execution Requirements

SEC requires broker-dealers to seek the most advantageous terms reasonably available under the circumstances for a customer's trading order. These circumstances include price, speed, and the likelihood of execution, among others. SEC has not promulgated a separate best execution rule or explicitly defined best execution. Traditionally, price has been the predominant factor in determining whether a brokerage firm has satisfied its best execution obligations. This position was reiterated in 1994.³¹

In 1999, in its examinations of the trade execution practices of 29 on-line broker-dealers, SEC found that 17 firms improperly emphasized "payment for order flow" in deciding where to send orders, rather than considering factors that could benefit trade executions, such as the best price. Payment for order flow occurs when a market maker, ECN, or an

³⁰Retail size trading orders can vary up to 10,000.

³¹SEC Exchange Act Release No. 37619A (Sept 6, 1996), 61 Fed Reg. 48,290.

exchange pays an on-line brokerage firm for its orders. The payments could include rebates of up to 1 or 2 cents a share and credits or discounts against fees charged for executing the order. Broker-dealers might also receive a portion of the profits made by the market maker.³² Thus, SEC found that the 17 firms, including 6 that we contacted, were not ensuring that their customers' trades received the best execution possible. The firms did not evaluate execution quality available from other competing market makers in making order routing decisions.³³ Instead, most of them routed orders to market centers whose execution quality, or percentage of trading orders that received price improvement, were well below industry averages. In response to SEC's findings, 7 of the 17 firms claimed the data used by SEC to identify these problems were flawed, or that their clearing firms were responsible for ensuring execution quality. However, the firms supplied the data SEC used to make its determinations; and according to SEC, the firms are ultimately responsible for ensuring that their customers receive best execution. SEC staff sent each firm a deficiency letter and plan to focus future examinations on broker-dealers' best execution obligations.

Officials from five of the on-line broker-dealers we contacted told us they emphasized speed and liquidity—the ease with which the market can accommodate large volumes of securities trading without significant price changes—over price improvement in providing their customers the best trade executions. According to SEC officials, these factors can be considered as long as the brokerage firm conducts a regular and rigorous evaluation of the quality of the different market makers trading in a particular security.³⁴ However, SEC found that 17 broker-dealers were not taking the steps necessary to determine whether other market centers offered faster execution or executions that were just as fast but had a greater likelihood for price improvement. SEC also identified these problems in its deficiency letters and plans to focus future examinations on broker-dealers' best execution obligations.

Officials from 3 of the 5 on-line broker-dealers that emphasize speed of execution explained that many investors were not willing to wait to get an

³²Six of the 12 firms in our review disclosed in their customer account agreements that they could receive payment for order flow.

³³Some of these problems may be mitigated as changes in market structure occur, such as centralizing securities prices and orders or changing to decimal trading with the prospect of penny differences between offers to buy or sell stock.

³⁴Exchange Act Release No. 26870 (May 26, 1989) 54 Fed. Reg. 23,963 (1989); Exchange Act Release No. 34,902 (Oct. 27, 1994), 59 Fed Reg. 55,006 (1994).

opportunity for a price improvement of 1/8 or 1/16 on a specific stock in order to save a few pennies on a trade. However, the Chairman of SEC said in a November 1999 speech that retail investors might be willing to give up a few seconds if it meant receiving more money on the sale of a stock or saving money on the purchase of stock. He explained that if a brokerage firm receives payment for order flow from a market maker at the rate of a penny a share on a 1,000-share order, the brokerage firm gives up the possibility of obtaining price improvement from another market maker. A price improvement of 1/16th on a 1,000-share order would mean that the customer has overpaid by \$62.50.

Firms Are Addressing Best Execution Problems

In its examination of on-line broker-dealers, SEC found that six brokerage firms we contacted were not fulfilling their best execution duty. Officials from five of the six firms told us that they have implemented improvements to help ensure that investors receive the best price for a stock. These improvements included establishing execution quality committees to monitor trade executions on a weekly basis, implementing software programs that automatically flagged trading orders executed outside of the bid and ask price of stocks, and requesting price improvement data from other market centers. Officials from one major firm that did not implement any specific measures told us that execution quality was the responsibility of the broker-dealer executing the trades, which was contrary to SEC's view. They also said that they respond to complaints made by individual investors on execution quality.

On-line investors can also take steps to help ensure quality trade executions. In its on-line trading examinations, SEC found that many on-line broker-dealers would accommodate a customer's request to route an order to a specific market center, although the customer would likely be charged higher commission fees. Investors may be able to offset the higher fees by getting better prices for their trades. Eight of the 12 firms in our review did not provide this information on their Web sites or customer account agreements. The Chairman of SEC said investors would benefit greatly from more information about execution quality. SEC staff said they are considering what additional information on trade execution could benefit investors and in what form that information should be provided.

Suitability Considerations Are Not Clear in the On-line Trading Environment

When broker-dealers or registered representatives recommend specific securities to investors, securities rules make them responsible for determining whether the potential investment is suitable for those investors. Officials from the on-line broker-dealers we contacted reported that they do not provide their customers the type of specific stock recommendations that would trigger the suitability requirements.

However, the suitability rules may begin to apply as these firms develop information tailored to individual investors.

NASD first adopted suitability rules in 1939 as part of its Rules of Fair Practice. Currently, NASD's suitability rules require member broker-dealers to make reasonable efforts to obtain and document the data they use or consider in determining whether their recommendations are suitable for their customers. The data are to include customers' financial and tax status and investment objectives. Other SROs have similar rules that are grounded in concepts of professionalism, fair dealing, and just and equitable principles of trade. For instance, NYSE's "Know Your Customer Rule" requires members to use due diligence to learn the essential facts relative to every order, cash or margin account accepted, and every person holding a power of attorney over any account.³⁵ In addition to customer-specific suitability, firms must have a reasonable basis for believing that a particular security being recommended is appropriate for any investor. To have such a reasonable basis, firms must perform due diligence on the security to be in a position to recommend the security to a customer.³⁶

Each of the 12 on-line broker-dealers in our review either displayed disclaimers on their Web sites or told us that they do not offer advice on the suitability of particular investments or "recommend" specific stocks to individual customers. However, suitability determinations depend on the facts and circumstances relative to every customer, and these broker-dealers provided a wide range of information to their customers. They offered their customers investment and research reports prepared by unaffiliated companies that contained recommendations for thousands of stocks, and they linked these reports to their Web sites. In addition, some firms we contacted charged their customers for general stock recommendations by specific industry or risk category. Officials from several firms told us their investment research services are the same tools used by professional brokers. An SEC commissioner expressed concern about whether this research raises suitability issues because investors might assume that information posted on firms' Web sites is a recommendation by the brokers.

In addition to research from unaffiliated companies, 2 of the 12 on-line broker-dealers we contacted offered their customers research information from the firm's analysts. An SEC official told us that suitability

³⁵All of the 12 on-line broker-dealers we contacted were members of NASD, and 4 were also NYSE members.

³⁶Hanley v. SEC, 415 F. 2d 589, 596 (2d. Cir. 1969).

requirements typically have not applied to analysts' recommendations unless the recommendations are brought specifically to the attention of individual investors. However, a legal expert on securities trading told us that some type of suitability obligation might apply when broker-dealer analysts prepared the research provided to on-line investors. Officials from four on-line broker-dealers generally agreed, especially, as one official said, when a firm's own research is the only information provided on the Web site. All of the on-line broker-dealers we contacted used disclaimers on their Web sites or in customer account agreements that the research service they offered should not be used or considered as a recommendation to buy or sell a particular security. Such a recommendation might trigger suitability requirements. SEC staff told us that broker-dealers could not use such disclaimers to make their customers waive their rights under federal securities laws.

Further, two on-line broker-dealers offered their customers access to personalized messages about particular stocks through chat rooms and bulletin boards. Chat rooms and bulletin boards include participants' opinions about specific stocks. These firms also sponsor "live events" in their chat rooms that present financial analysts who sometimes recommend specific stocks in response to customer questions. SEC staff expressed concern that investors may believe that the on-line firms had endorsed the recommendations. In a series of roundtable discussions SEC held with broker-dealers in 1999, many participants favored additional guidance from SEC on what types of information and what delivery mechanisms might trigger suitability responsibilities. SEC staff told us they are reviewing which on-line trading activities might require suitability determinations.

Regulators Plan More Extensive Oversight of Advertising for On-line Trading

NASD regulations on advertising require firms to portray the risks and rewards of investing on-line in an honest, fair, and balanced manner. Eleven of the 12 on-line broker-dealers we contacted plan to collectively spend about \$1 billion on advertising to attract new on-line customers during 2000. Because of the volume of advertising for securities trading in general, overseeing the quality of on-line trading advertising has been difficult. In early 1999, NASDR found that firms engaged in extensive and aggressive advertising campaigns had minimally complied with advertising regulations. Later in 1999, SEC found improvements in the quality of advertising by on-line broker-dealers. However, NASDR reported that it plans to monitor advertising by on-line broker-dealers more aggressively.

An NASDR official told us that NASD's review of television advertising by on-line broker-dealers in early 1999 found that firms' use of expensive

material goods in advertisements or suggestions about investment returns portrayed unrealistic expectations about opportunities to profit through on-line trading. For example, in its advertising campaign one firm showed a person trading on-line in a mansion. Another firm's ad had "Al the tow truck driver" telling a passenger about the island that he now owned due to trading through his on-line broker-dealer. In another ad, a jogger sheepishly admits that she still invests in mutual funds in response to a friend who boasted that she had just made \$1,700 in an on-line trade. This ad may be demeaning to those who would invest in mutual funds. Rather than taking formal enforcement actions against these firms, NASDR negotiated the voluntary withdrawal of certain misleading advertising campaigns. NASDR also sponsored three advertising roundtables between June and July 1999, at which the legal and ethical responsibilities of broker-dealers who promote on-line trading were discussed.

SEC's mid-1999 review of on-line broker-dealer advertising found that firms have begun to modify their advertisements. For example, two on-line broker-dealers had televised ads that communicated the risks associated with on-line trading in a volatile market. One of these firms instructed investors not to view on-line trading as playing the lottery, and the other firm suggested that investor education was important in on-line trading.

To prevent misleading advertisements, NASD rules require compliance personnel at member firms to approve advertisements before they are used and to submit certain marketing material and sales literature to NASDR. NASDR rules do not require that firms submit all advertisements. Officials from many of the firms told us they sent advertising materials for NASDR review only when they were concerned about the content of the advertising. NASDR officials told us that they review all of the advertising submissions.

In September 1999, NASDR announced plans to adopt more aggressive oversight and investigation of possible rule violations for television advertising. NASDR monitors advertisements for on-line trading and works with other regulators and NASD members to educate the investing public. If firms are required to file advertisements, NASDR also plans to require members to file a final filmed version of a television or videotape advertisement within 10 days of its first use or broadcast.

Conclusions

The on-line trading segment of the securities industry is growing and evolving rapidly. What began as primarily an order entry system has evolved into a myriad of on-line services and programs to help investors independently plan and track their investments, including allowing them to

engage in more risky strategies, such as margin trading and IPOs. Industry analysts expect the growth in on-line trading to continue.

On-line trading has generated many benefits to individual investors, such as reduced commission costs to trade securities and free research and other investment tools that had previously been available only to professional brokers and institutional investors. However, on-line investors have also experienced problems, such as trading system delays and outages. On-line broker-dealers neither consistently monitor these disruptions nor disclose that such disruptions could occur. Maintaining consistent records about delays and outages could provide the broker-dealers information that could be used to better inform investors about the potential for, and adverse effects of, delays and outages. The information could also assist securities regulators in assessing whether these broker-dealers comply with SEC guidance on maintaining adequate system capacity.

Investors might be able to find all the information they need about how to trade on-line and the risks of doing so from a combination of sources, including their broker-dealers' Web sites or written material, regulators' Web sites, or other Internet sources. However, on-line investors make their trades on the Web sites of their broker-dealers, and regulators and industry members agree that this is the best place to provide the information on-line investors need. Some Web sites of on-line broker-dealers were incomplete or missing key pieces of information in the investor protection areas of margin requirements, privacy considerations, risk disclosures, and trade executions. As SEC complaints have shown, many on-line investors may not understand the risks they are taking or the rules and procedures for trading. Providing complete information on the Web sites of on-line broker-dealers could help investors make more informed investment decisions.

Recommendations

We recommend that the Chairman, SEC, require broker-dealers with on-line trading systems to maintain consistent records on systems delays and outages and their related causes and to disclose the potential for service disruptions on their Web sites. We also recommend that the Chairman monitor these records to ensure that firms have adequate capacity to serve their customers.

We also recommend that the Chairman, SEC, ensure that broker-dealers with on-line trading systems include accurate and complete information on their Web sites in the key investor protection areas of risk disclosure, margin requirements, privacy considerations, and trade executions.

Agency Comments and Our Evaluation

SEC provided oral technical comments on a draft of this report, which we have incorporated where appropriate. In addition, SEC provided written comments (see app. II) in which it said it appreciated our thoughtful recommendations in this new and evolving area. SEC highlighted the actions it has taken, or plans to take, in each of the areas we discuss in our report, and said it believed these efforts were responsive to our recommendations. For example, it said the Chairman has actively encouraged on-line brokers to use their web sites to better inform customers and SEC would continue to focus broker-dealer examinations on best execution. SEC also plans to closely monitor adherence by the firms to privacy rules when they go into effect. These examples show that SEC is working to increase the information available to investors in the areas we identified. However, we continue to believe that on-line investors need to be able to access this information directly on their brokers' Web sites. We also believe that SEC, through its examinations, recommendations, and rule proposals, can help ensure that on-line brokers provide such information.

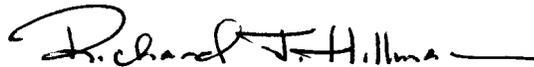
SEC noted that it has published recommendations and proposed rules addressing on-line systems' capacity, vulnerability, and operational capability. SEC also said it often includes an assessment of system capacity and reliability in its examinations of both on-line and traditional brokers, including reviewing records on system delays and outages and their causes. However, these activities do not address variations in the methods firms use to track delays and outages, or the disclosure of the potential for disruptions on firms' Web sites. This makes it difficult for investors to understand the potential limitations of on-line trading systems or compare system performance for various on-line brokers. Therefore, we believe SEC should have broker-dealers with on-line trading systems maintain consistent records on delays and outages, which includes defining at what point a trading system disruption is considered an outage. We also believe that SEC should have broker-dealers inform customers of their track record for trading system disruptions, and the potential for these occurrences.

NASD and NYSE provided oral technical comments on a draft of this report, which we have incorporated where appropriate. NASD also provided written comments (see app. III) in which it said our report provides insight into the public policy issues relating to on-line trading that will be helpful in illuminating several important on-line trading issues. NASD also mentioned it created a new page on its Web site directed to on-line investors.

As we agreed with your offices, we plan no further distribution of this report until 30 days from its issuance date unless you publicly release its contents sooner. We will then send copies of this report to Representative Tom Bliley, Chairman, House Committee on Commerce; Representative Fred Upton, Chairman, Subcommittee on Oversight and Investigations, Representative W.J. "Billy" Tauzin, Chairman, Subcommittee on Telecommunications, Trade, and Consumer Protection, and Representative Michael G. Oxley, Chairman, Subcommittee on Finance and Hazardous Materials, House Committee on Commerce; Senator Susan M. Collins, Chairwoman, Permanent Subcommittee on Investigations, Senate Committee on Governmental Affairs; the Honorable Arthur Levitt, Chairman, SEC; Mr. Frank Zarb, President and CEO, NASD; and other interested committees and organizations. Copies will be made available to others upon request.

Major contributors to this report are acknowledged in appendix IV. Please call me or Michael Burnett on (202) 512-8678 if you or your staffs have any questions about the report.

Richard J. Hillman

A handwritten signature in black ink that reads "Richard J. Hillman" with a horizontal line extending to the right.

Associate Director, Financial Institutions
and Markets Issues

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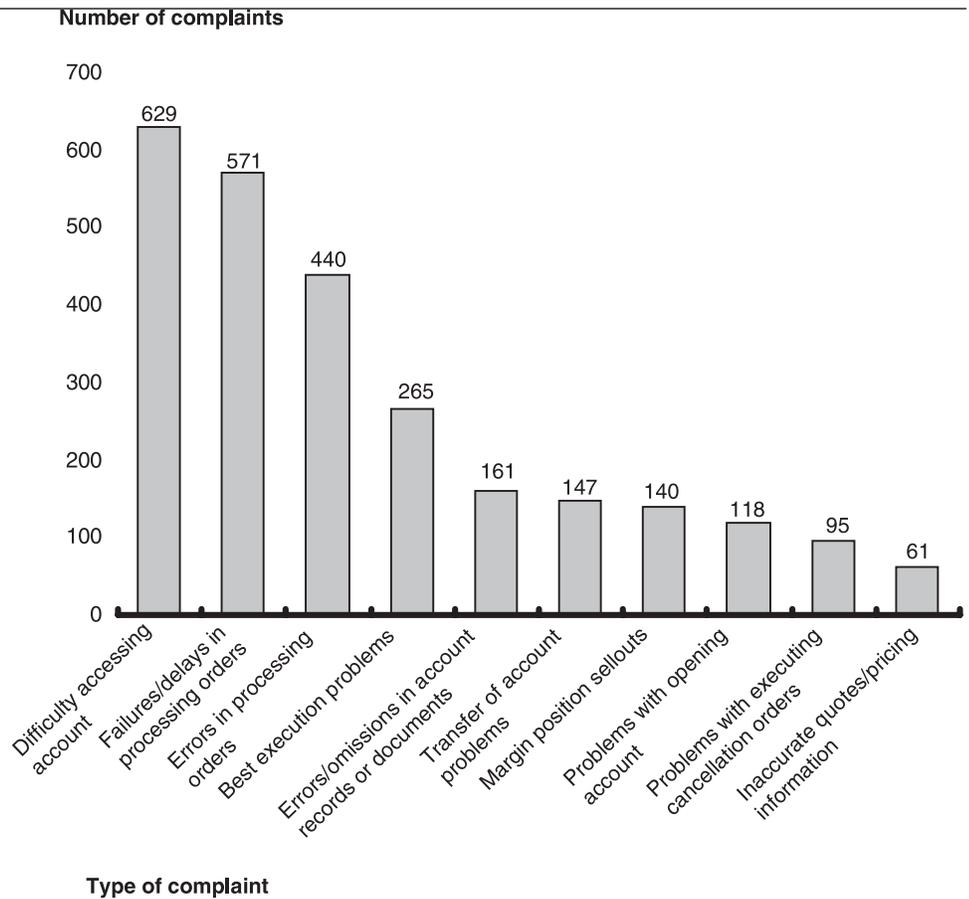
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Abbreviations

IPO	Initial Public Offering
NASD	National Association of Securities Dealers
NYSE	New York Stock Exchange
SEC	Securities and Exchange Commission
SRO	self-regulatory organization

Top Ten On-line Trading Complaints to SEC, January 1998 to June 1999



Source: SEC Office of Investor Education and Assistance.

Comments From the Securities and Exchange Commission



OFFICE OF COMPLIANCE
INSPECTIONS AND
EXAMINATIONS

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

April 19, 2000

Mr. Richard Hillman
Associate Director
Financial Institutions and Market Issues
United States General Accounting Office
Washington, D.C. 20548

Re: GAO Draft Report Entitled: "Online Trading: Better Investor Protection Information Needed on Brokers' Web Sites"

Dear Mr. Hillman:

Thank you for the opportunity to comment on the General Accounting Office's ("GAO") report entitled Online Trading: Better Investor Protection Information Needed on Brokers' Web Sites. The report recommends: 1) that the Securities and Exchange Commission ("Commission") require on-line broker-dealers to maintain consistent records on systems delays and outages, including their related causes, and to disclose on their Web sites the potential for service disruptions; 2) the Commission examine these records to ensure that on-line broker-dealers have adequate capacity to serve their customers; and 3) that the Commission require on-line broker-dealers to include investor protection information on their Web sites in the areas of risk disclosure, margin requirements, privacy considerations, and trade execution.

As you know, Chairman Levitt has actively encouraged online brokers to use their web sites to better inform their customers about the risks of market volatility, margin, and systems reliability. In doing so, Chairman Levitt has emphasized the importance of supplying the information in a clear manner rather than "through complex and legalistic language." In addition, on May 4, 1999, Chairman Levitt wrote to all known online brokers challenging them to improve their investor education efforts regarding, among other things, the limitations of technology and the risks of online trading and of trading on margin.

Chairman Levitt has also addressed best execution obligations in a November 4, 1999 speech entitled "Best Execution: Promise of Integrity, Guardian of Competition." The Commission's web site (www.sec.gov) provides guidance to investors in this area. The Commission's staff plans to continue to focus on best execution in its examinations of broker-dealers.

With respect to privacy considerations, the Commission issued a release in March of this year proposing rules that would enhance the protection of investors' privacy by requiring broker-dealers, among others, to provide their customers with a notice that discloses their policies regarding the use of customer information. In addition, subject to

Appendix II
Comments From the Securities and Exchange Commission

Mr. Richard Hillman
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limited exceptions, the rules would provide investors with the right to block the transfer of their nonpublic personal information to marketing entities that are not affiliated with their broker-dealers. Finally, the rules would require that broker-dealers adopt policies and procedures that address administrative, technical, and physical safeguards for the protection of customer records and information, including measures that would help to ensure the security and confidentiality of customer records and information. The Commission's staff will closely monitor adherence by the firms to these rules once they go into effect.

As these examples show, the Commission and its staff have been working to increase the amount of information available to investors in the areas identified in the GAO's report as well as to address the underlying issues.

The Commission also recognizes the importance of systems reliability with regard to online trading and the other areas of the markets affected by technology. In September 1999, the Commission's staff published a legal bulletin recommending that market participants take steps to establish "comprehensive planning and assessment programs to determine systems capacity and vulnerability." In addition, early last year the Commission proposed a rule regarding operational capability of broker-dealers. The Commission has deferred action on the proposed rule because of the comments received, but the staff is working on a revised version for possible re-proposal.

In addition, the Commission's staff reviews a firm's ability to handle its business when it examines both online and traditional broker-dealers. This review often includes the capacity and reliability of a firm's systems. For online brokers, examiners also evaluate a firm's ability to continue to serve its clients in the event of systems slowdowns or outages. During examinations of online brokers, examiners typically request records on systems slowdowns and outages and their causes. The Commission's staff believes that these efforts are responsive to the GAO's recommendations regarding systems capability.

We appreciate the GAO's thoughtful recommendations in this new and evolving area. The Commission intends to continue evaluating the use of online brokerage in an effort to help ensure investor protection in the rapidly changing financial markets. Thank you and your staff for your courtesy during this assessment.

Very truly yours,



Lori A. Richards
Director

Comments From the National Association of Securities Dealers



Mary L. Schapiro
President

April 14, 2000

Thomas J. McCool
Director, Financial Institutions and Market Issues
General Government Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. McCool:

The NASD appreciates this opportunity to review and provide formal comments on the GAO draft report entitled *Online Trading: Better Investor Protection Information Needed on Broker's Web Sites* (GAO job code 233613). The draft report provides insight into the public policy issues relating to the online trading industry.

We have reviewed the draft report and have provided your staff with a series of technical edits to further enhance the report's accuracy. There is one new development at NASD Regulation that I would like to mention in the event that you want to include it in the report. We have just completed development of a new web page directed to online investors (it can be reached through www.nasdr.com). We are asking online firms to link directly to it. It provides very useful information about the mechanics of online investing and margin, among other matters.

Thank you again for the opportunity to comment on this report, which we believe will be helpful in illuminating several important issues relating to online trading.

Sincerely,

A handwritten signature in cursive script that reads "Mary L. Schapiro".

Mary L. Schapiro
President
NASD Regulation, Inc.

GAO Contacts and Staff Acknowledgments

GAO Contacts

Richard J. Hillman, (202) 512-8678

Michael A. Burnett, (202) 512-8678

Acknowledgments

In addition to those named above, Denise Callahan, Robert Pollard, Kate Mannen, and Don Yamada contributed to this report.

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