



On-Line Discount Brokers

by Kenneth J. Michal

Our first comparison of the new millennium yields 75 on-line discount brokers—decreasing the total by one from last year's 76 brokers.

As the industry continues to settle into the consciousness of the mainstream, it appears as though the roster of on-line brokers has reached a plateau. Some firms have dropped out, a couple have merged, and a few others did not make our deadlines. The growth in the number of firms appears to have slowed down—for the last three years now we have seen totals in the low- to mid-70s. From 1996 to 1999, our comparisons were characterized by large increases in the number of on-line brokers.

The bar chart in Figure 1 traces the growth in the number of registered on-line discount brokerage firms over the 10-year period since we first covered them. A big jump took place in 1996 soon after the launch of the first Internet-based broker. Today, as was the case the last two years, all the on-line brokers surveyed offer Internet trading capabilities.

Figure 2 depicts the trend in on-line commissions, displaying the movement of commissions for a 100-share market order charged by on-line discount brokers over the last 10 years. Like the number of brokers, last year's commissions chart seemed to settle into three plateaus, as the highest, lowest, and even the average commissions remained the same as those reported the prior year.

With the 2001 numbers, the highest commission level has been extended. The perennial highest commission broker is once again Max Ule at \$45.60 for the sample 100 share trade. The lowest commission graph has hit an all-time low—a rock-bottom free trade. The award for this year's lowest commission broker goes to The Financial Café, which currently offers free market orders for unlimited share trades. You may ask, "What's the catch?" There is no catch as far as we can see; however,

the same trade using a limit order with The Financial Café costs \$14.75.

Brokerage firms generate revenue from many sources beyond commissions, including payment from dealers to execute trades, the mark up between the bid and ask of the stock price, and lending securities and money.

With commissions at these low levels, brokers are trying to focus on features that differentiate them from each other such as research tools, better rates for active investors, after-hours trading, brick and mortar brokerage offices, upgrading trading infrastructure and technology, and even the promise of participating in IPOs. Over the last several years, bonus features such as research tools and free real-time quotes have given certain firms an added benefit—a competitive advantage over other brokerages offering less.

For example, in today's on-line broker arena there are still some firms that are charging for real-time quotes and even some that still only offer delayed quotes—an archaic practice one would expect to be extinct by the year 2000. Delayed quotes are available for free at any investment-related site on the Web, and many sites are now even offering free real-time "snapshot" quotes to their registered users. Brokers with meager offerings are at a clear disadvantage in this competitive on-line broker world.

The comparison grid on the following pages details these services and reports any associated fees charged, if

any. Firms that offer trading via the Web are able to package the widest range of information and coverage as a result of the multitude of resources that can be linked through the Internet.

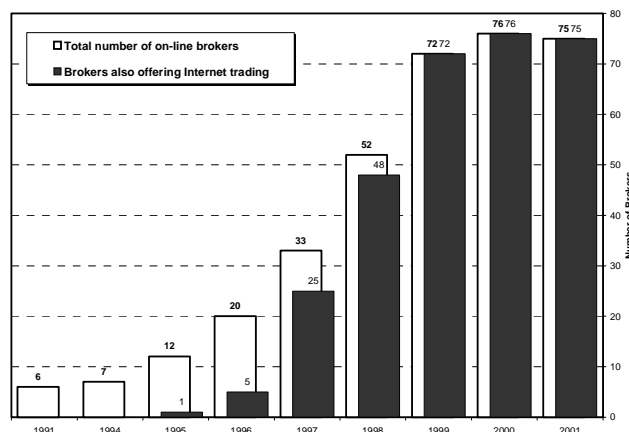
As always, verify the information presented here by contacting the brokers before making any final decisions.

Behind the Numbers

In the early years, when discount brokers first ventured on-line with direct dial-up software, on-line commissions decreased only moderately. Three years ago, however, we witnessed the first significant dip in commission charges, with the average minimum commission going from \$34 down to \$20. Two years ago we saw commission charges drop only slightly to \$18, and the average remained the same last year. The average commission charged by this year's roster of brokers has risen slightly from \$18 last year up to \$20. This is due in large part to the addition of several new firms either without flat-fee commission schedules or commissions over the \$20 threshold.

Last year, almost half (49%) of the on-line discount brokers surveyed reported minimum commissions below \$15. This

Figure 1.
Growth of On-Line Brokers



year just over half (51%) of the 75 firms report minimum commissions below \$15, and 18 brokers have minimum commissions under \$10.

The movement to flat-fee commission schedules continues to provide big savings for the individual investor. Flat-rate pricing decreases the confusion for the investor, and the broker as well. This year, 70 of the 75 brokers in our comparison report a flat-rate commission schedule.

Keep in mind that these deep-discount commissions typically apply to market orders filled at the available bid/ask price when your order reaches the exchanges. As indicated in the grid, most firms extend their flat-rate schedule when you move into limit orders, but commission fees do change at some brokerages. Any such offers should be verified by contacting the firms directly.

Trading Options

The Other Trading Options section of the grid shows alternatives to Internet trading. In addition to being able to place trades via an on-line trading module hosted at the firm's Web site, brokers may also offer a telephone option and a choice for the investor who is on the go.

Touch-tone service simply allows you to place your trades over the phone using your phone's keypad.

Personal digital assistants (PDAs) have become popular tools for contact management and task management, and they are able to handle spreadsheets, mini-software applications, and games. Today, these handheld PCs have also become the standard for wireless trading, with capabilities allowing for two-way communication throughout the U.S. As indicated in the grid, a fair sample of firms now offer trading through these devices.

If you are interested in wireless trading via your handheld PC, please see the feature article "Turning Your Handheld PC Into a Financial Toolkit" in the September/October 2000 issue of *Computerized Investing*. This article is also available on the ComputerizedInvesting.com Web site.

Flexibility of a firm's trading system

is a key component in the evaluation of any broker's offerings. If the firm's Web site is down due to heavy trading volume or merely experiencing technical problems and you cannot get in to access your accounts, the touch-tone service option becomes very valuable.

Internet trading presupposes that you have a connection to the Internet, and wireless trading presupposes that you have obtained the necessary unit.

Commission Discounts

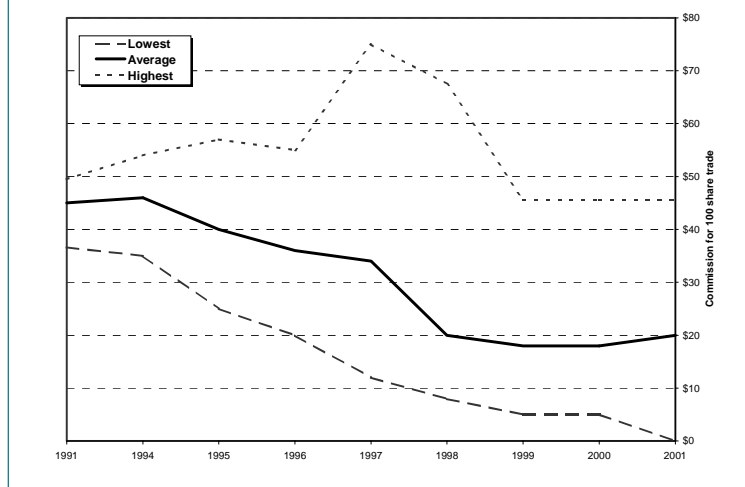
Discounts are detailed in the column labeled On-Line Commission Discount. This percentage figure is versus a minimum commission fee for speaking with a live broker to directly place a trade.

Commissions

Last year the Commissions section received a major overhaul, updating the segment of the grid to suit the flat-fee commission world of today's on-line broker industry. The Flat-Fee Commission Rate and Maximum Number of Shares columns should serve as the base for any commissions analysis. If the broker does not offer a flat-rate schedule, then "none" appears. A sample trade of 500 shares at \$50 per share is presented, along with what percentage of the total transaction the commission is, to allow comparison with brokers that do not have flat-fee schedules. Two other key pieces of information include whether commissions vary depending on exchange (denoted by an asterisk) and any additional charge for limit orders.

For example, let's look at E*Trade's commission situation. E*Trade has a

Figure 2.
On-Line Commissions 1991-2000



flat \$14.95 fee for up to 5,000 shares. Their commission schedule does change depending on whether orders are placed for a Nasdaq stock or an exchange-listed stock, and the commissions move up to \$19.95 for limit order trades.

No-Load Mutual Fund Transactions

The figures entered in the Minimum Fee for No-Load Mutual Fund Transaction column are calculated by figuring the associated commission of purchasing one share at \$1.

Securities Handled

All on-line brokers included here handle stock trades, so this is not shown in the grid as a check mark. Most of the brokers allow you to trade the basic securities such as options, bonds, mutual funds, annuities, and certificates of deposit.

Unfortunately, only two of the firms in this year's survey allow individuals to trade futures contracts on-line. This is primarily due to the highly leveraged nature of futures and their accompanying liability concerns.

Commission structures vary for different types of securities traded, so be sure to ask for a detailed commission schedule from any potential broker and review it carefully. Most brokers describe basic commissions and fees on their Web site; however, you may have to contact the firm directly for details

involving specific situations.

Cash Management Account

A cash management account is simply a special money management account made available to clients of the brokerage firm. Cash management accounts offer checkwriting abilities, debit card use, and sweep account capabilities.

Placing Orders

Most brokers allow for basic trades to be placed on-line, such as market orders, limit orders, and stop orders.

The simplest of all orders is the market order, which is usually executed immediately at the best available price. Before placing a trade, it is important to first examine the market price by looking at the last trade price and its time of execution, the current inside bid/ask spread, the size of these offers, and the volume. While a market order offers you the quickest and surest way to accomplish a trade, it comes with the risk that a quickly moving or thinly traded market may lead to a poor execution price.

A limit order reduces this transaction risk by setting the minimum price that an investor is willing to sell a security at, or the maximum price that an investor is willing to pay to purchase a security. As mentioned above, the flat-fee commissions are based upon entering a market order. Some firms are extending their flat commission schedules to include limit orders as well. Ask any prospective brokers if their stated commissions apply to limit orders—that added flexibility could put one firm ahead of the others under consideration.

Stop orders are also tied to market moves. While a limit order establishes a set price or better, a stop order becomes a market order when the security's price hits the stop price. This order will then be filled at the prevailing market price, with no guarantee of a specific price.

Length of time can also be assigned to on-line orders, such as a day order (good through that day only) or good-until-canceled (usually good through the end of the month in which the transaction was placed).

A do-not-reduce order is an instruction not to automatically reduce a stop or limit order by the amount of the dividend when a stock goes ex-dividend.

Specifying which lots are to be sold is done through a versus purchase order. A versus purchase order helps individuals limit their tax liability by allowing them to sell shares that were purchased at a specific price.

Order Confirmations

The section entitled Confirmation of Order Fulfillment Delivered refers to how you are notified that your recent order was filled. Order fulfillment confirmation can appear on-line at a designated area on the broker's Web site, or it can arrive in your inbox as an E-mail message. A confirmation can also come in the form of a telephone call or be sent via regular mail.

In most cases, more than one means of receiving confirmation is available.

Portfolio Data

Immediate access to account information is a huge benefit of on-line trading. It is important for the broker to make this type of portfolio data available and easy to access. It allows you to see how much cash you have in your account to purchase new securities, as well as to view those securities you already own.

In addition to reporting on the availability of cash balances and positions, the comparison grids in this section also indicate which on-line brokers provide a record of dividends received from your securities and a detailed ledger of your account transactions. This year we have expanded the Transaction Record column to report on the historical time period of the transaction ledger. The reference "since inception" points to a transaction ledger that begins with the opening of your account. The shortest time frame is one week. Where there are blanks, the broker simply did not provide information.

The brokers were also surveyed on when portfolio information is updated following a transaction or change in the portfolio holdings or cash account. Real-time (symbolized by RT in the grid) denotes that the portfolio is updated immediately following a change. Intraday (ID) updating is on a delayed basis, such as a

15-minute delay or every hour. End-of-day (ED) simply means that changes to the portfolio would not be reflected in your records until the next trading day. In a few cases, you can request that portfolio updates are periodically sent to your inbox in the form of an E-mail message (EM).

Quotes

Current quotes on securities are a vital part of placing a trade. An investor needs fresh data, no matter how volatile the market, to make informed decisions.

The bid/ask price refers to the spread between the bid and the ask price of a stock. Last trade denotes the price at which the security last traded. Volume refers to the total shares that have changed hands for that security. We also report on the availability of high/low price for the day and for the year, which aids in determining a security's relative price standpoint.

We have broken down the quotes section by the type of quotes available—delayed (denoted by DY in the grids), real-time (again RT), and Nasdaq Level II (NLII). In the past, real-time quotes were quite expensive and rarely free. Today, the popular means of offering real-time quotes is with a quote bank. Many brokers offer a quote bank with 50-100 free real-time quotes with all new accounts opened. Most often, 100 additional free real-time quotes are added to the quote bank with each executed trade, and these quotes can accumulate. Firms that offer quote banks are noted in the grids as offering free real-time quotes. If necessary, additional quotes can be purchased for a fee. Some brokers charge a fee for real-time quotes as well as for Nasdaq Level II quotes, most often on a per month basis—if so, the fee is identified in the grids.

Live Broker Availability

In addition to touch-tone trading or a wireless trading option, the availability of "live" brokers adds flexibil-

(continued on p. 20)

PRODUCT COMPARISON: ON-LINE DISCOUNT BROKERS

Broker Name Web Address	Phone Number	Other Trading Options		On-Line Commission Discount	Commissions (asterisk denotes price may vary depending on exchange)					Minimum Fee for No-Load Fund Transaction	Other Securities Handled						Types of Orders That Can Be Placed On-Line						
		Touch-Tone Service	Hand-Held Wireless Unit		Flat-Fee Commission Rate	Maximum No. of Shares at Flat Rate	500 Shares@ \$50 per Share	% of 500 Share Trade	Additional Charge for Limit Orders		Bonds	Mutual Funds	Options	Futures	Annuities	CDs	Offers Cash Management Account	Market & Limit	Stop	Stop-Limit	Day/Good- Until- Canceled	Short Sell	
A.B. Watley Group www.abwatley.com	888/229-2853	✓	✓	58%	\$9.95	5,000	\$9.95	0.04%	none	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
AccuTrade www.accutrade.com	800/494-8939	✓		none	\$29.95	1,000	\$29.95	0.12%	none	\$27.00		✓						✓	✓	✓	✓	✓	✓
American Express Brokerage www.americanexpress.com/trade	800/297-7378	✓		73%	\$19.95	3,000	\$19.95	0.08%	none	none		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Ameritrade www.ameritrade.com	800/669-3900	✓	✓	55%	\$8.00	no limit	\$8.00	0.03%	\$15.00	\$18.00		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Banc of America Inv't Serv www.bankofamerica.com/investments	800/926-1111	✓		38%	\$24.95	1,000	\$24.95	0.10%	none	none		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Barry Murphy & Co. www.barrymurphy.com	800/221-2111	✓		varies	\$29.95	2,000	\$29.95	0.12%	\$4.00	none	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓
Bidwell & Co. www.bidwell.com	800/547-6337	✓		40%	\$12.00	1,500	\$12.00	0.05%	\$3.00	varies		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Brown & Co. Securities www.brownco.com	800/822-2021	✓		71%	\$5.00	5,000	\$5.00	0.02%	varies	n/a		✓	✓				✓	✓	✓	✓	✓	✓	✓
Bull & Bear Securities www.bullbear.com	800/262-5800	✓		36%	\$19.95	5000	\$19.95	0.08%	none	\$23.00		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Bush Burns Securities www.bushburns.com	800/821-4803			29%	\$25.00	5,000	\$25.00	0.10%	none	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BUY and HOLD Securities www.buyandhold.com	800-646-8212			none	\$9.99	no limit	\$2.99	0.01%	none	n/a													
Century Discount Investments www.centurydiscount.com	800/366-1500			none	none	n/a	\$29.00	0.12%	none	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Charles Schwab www.schwab.com	800/435-4000	✓		none	\$29.95	1,000	\$29.95	0.12%	none	varies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ComputEL Securities www.computel.com	800/432-0327	✓		42%	\$14.00	1,000	\$14.00	0.06%	\$5.00	none		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CyBerCorp.com www.cybercorp.com	888/762-9237			none	\$14.95	no limit	\$14.95	0.06%	none	n/a							✓	✓	✓	✓	✓	✓	✓
Datek Online www.datek.com	888/463-2835			60%	\$9.99	5,000	\$9.99	0.04%	none	\$9.99		✓					✓	✓	✓	✓	✓	✓	✓
DLJdirect www.dljdirect.com	800/825-5723	✓	✓	none	\$20.00	1,000	\$20.00	0.08%	none	\$35.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Downstate Discount www.trade4less.com	800/780-3543			43%	\$19.95	5,000	\$19.95	0.08%	none	\$40.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Dreyfus Brokerage Serv www.edreyfus.com	800/421-8395	✓	✓	25%	\$15.00	100,000	\$15.00	0.06%	none	\$20.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

*DY=delay, ED=end of day, EM=E-mail, ID=intraday, NLII=Nasdaq Level II, RT=real time

Do Not Reduce Versus Purchase	Open Orders	Confirmation of Order Fulfillment Delivered	Portfolio Information Available On-Line							Quote Data Available					Free Research Offered On-Line																
Examine & Change Cancel	Via an On-Line Link	Via an E-Mail Message	Via a Telephone Call	Via Regular Mail	Cash Balance	Positions and Values	Dividends Received	Transaction Record	Transaction Record History Availability	Portfolio Information Updated*	Bid / Ask Price	Last Trade Volume	High / Low (Day)	High / Low (52-Week)	Dividend / Ex-Dividend Date	Type of Quotes (Delay, Real-Time, NLII) [®]	Real-Time Quote Fees (per month, rounded)	Nasdaq Level II Quote Fees (per month, rounded)	Live Broker Availability (EST)	After-Hours Trading (EST)	Fundamental Data	Earnings Estimates	Analyst Reports	Mutual Fund Ratings	Mutual Fund Performance Data	Portfolio Tracking	Screening	Charts	News	Web Site Offers a Trading Demo	
✓	✓	✓	✓	✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	DY,RT NLII	free	\$300	7:00am-8:00pm	am & pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	18 mos.	ED	✓	✓	✓	✓	✓	DY,RT	\$20	n/a	8:00am-6:30pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	DY,RT NLII	free	free	24 hours/7 days		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	ED	✓	✓	✓	✓	✓	DY,RT	\$20	n/a	24 hours/5 days	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	3 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:00am-9:00pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓		ID	✓	✓	✓	✓	✓	RT	free	n/a	8:30am-5:00pm		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	9:00am-8:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	12 mos.	RT	✓	✓	✓	✓	✓	RT	free	n/a	8:00am-7:30pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	6 mos.	RT	✓	✓	✓	✓	✓	RT	free	n/a	7:00am-11:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	45 days	RT	✓	✓	✓	✓	✓	DY,RT	\$30	n/a	8:00am-5:00pm												✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	1 yr.	RT	✓	✓	✓	✓	✓	DY	n/a	n/a	n/a		✓	✓						✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	1 mo.	RT EM	✓	✓	✓	✓	✓	DY,RT	free	n/a	n/a		✓			✓	✓						
✓	✓	✓	✓	✓	✓	✓	✓	✓		RT, EM	✓	✓	✓	✓	✓	DY,RT NLII	free	varies	24 hours/7 days	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	varies	ED	✓	✓	✓	✓	✓	DY,RT NLII	free	varies	9:00am-6:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	RT, NLII	free	\$99	8:00am-8:00pm	am & pm	✓		✓		✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	4 yrs.	RT	✓	✓	✓	✓	✓	DY,RT NLII	free	varies	24 hours/7 days	am & pm	✓			✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 yrs.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	n/a	am & pm	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	6 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	9:00am-5:00pm						✓		✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	4 yrs.	ED	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:30am-7:00pm	am & pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Broker Name Web Address	Phone Number	Other Trading Options		On-Line Commission Discount	Commissions (asterisk denotes price may vary depending on exchange)					Minimum Fee for No-Load Fund Transaction	Other Securities Handled						Types of Order That Can Be Placed On-Line				
		Touch-Tone Service	Hand-Held Wireless Unit		Flat-Fee Commission Rate	Maximum No. of Shares at Flat Rate	500 Shares@50 per Share	% of 500 Share Trade	Additional Charge for Limit Orders		Bonds	Mutual Funds	Options	Futures	Annuities	CDS	Offers Cash Management Account	Market & Limit	Stop	Stop-Limit	Day/Good-Until-Canceled
E*Trade Securities www.etrade.com	800/786-2575	✓	✓	50%	\$14.95*	5,000	\$14.95*	0.06%	\$5.00	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Empire Financial Group www.empirenow.com	800/900-8101	✓		63%	\$6.95*	no limit	\$6.95*	0.03%	\$5.00	\$25.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Fidelity Brokerage Services www.fidelity.com	800/544-8666	✓	✓	58%	\$25.00	1,000	\$25.00	0.10%	\$5.00	none	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
First Financial Equity www.ffec.com	480/951-0079			20%	\$26.95	no limit	\$26.95	0.11%	none	varies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
First Union Brokerage www.firstunion.com	800/359-9297	✓		38%	\$25.00	1,000	\$25.00	0.10%	none	none		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Firstar Investment Services www.firstarinvestments.com	800/558-5818		✓	23%	\$24.95	1,000	\$24.95	0.10%	none	\$25.00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Firstrade Securities www.firstrade.com	888/988-6168	✓	✓	77%	\$6.95	no limit	\$6.95	0.03%	\$3.00	\$19.95		✓	✓	✓		✓	✓	✓	✓	✓	
Freedom Investments www.freedominvestments.com	800/381-1481	✓		67%	\$15.00	no limit	\$15.00	0.06%	none	n/a	✓	✓			✓	✓	✓	✓	✓	✓	
Harris InvestorLine www.harrisinvestorline.com	800/729-7585	✓		56%	\$14.95	5,000	\$14.95	0.06%	\$5.00	varies		✓	✓		✓	✓	✓	✓	✓	✓	
Interactive Brokers www.interactivebrokers.com	877/442-2757			97%	\$1.00	100	\$5.00	0.02%	none	n/a	✓	✓	✓		✓	✓	✓	✓	✓	✓	
InvestIN Securities Corp. investin.com	800-327-1883			50%	\$9.95	1,000	\$9.95	0.04%	none	n/a		✓			✓	✓	✓	✓	✓	✓	
Investrade www.investrade.com	800/498-7120	✓	✓	65%	\$7.95	no limit	\$7.95	0.03%	\$4.00	\$29.00		✓	✓			✓	✓	✓	✓	✓	
J.B. Oxford & Company www.jboxford.com	800/799-8870	✓	✓	41%	\$14.50	1,000	\$14.50	0.06%	\$5.00	\$25.00		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Levitt & Levitt www.trustrade.com	800/671-8505			63%	\$12.95	2,000	\$12.95	0.05%	\$5.00	\$12.95		✓	✓		✓	✓	✓	✓	✓	✓	
Lexit Capital, LLC www.lexitusa.com	800/926-9991			none	\$20.00	10,000	\$20.00	0.08%	none	n/a				✓	✓	✓	✓	✓	✓	✓	
Max Ule www.maxule.com	800/223-6642			20%	none	n/a	\$156.00	0.62%	none	varies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MB Trading www.mbtrading.com	877-628-7027			none	\$14.95	10,000	\$14.95	0.06%	none	n/a					✓	✓	✓	✓	✓	✓	
Merrill Lynch Direct www.mldirect.ml.com	877-653-4732			40%	\$29.95	1,000	\$29.95	0.12%	none	none	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Morgan Stanley Dn Wit Online www.msdownline.com	800/688-6896	✓	✓	25%	\$29.95	1,000	\$29.95	0.12%	none	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	

*DY=delay, ED=end of day, EM=E-mail, ID=intraday, NLII=Nasdaq Level II, RT=real time

Do Not Reduce Versus Purchase	Open Orders	Confirmation of Order Fulfillment Delivered	Portfolio Information Available On-Line										Portfolio Information Updated*	Quote Data Available						Type of Quotes (Delay, Real-Time, NLIH)*	Real-Time Quote Fees (per month, rounded)	Nasdaq Level II Quote Fees (per month, rounded)	Live Broker Availability (EST)	After-Hours Trading (EST)	Free Research Offered On-Line																
			Examine & Change Cancel	Via an On-Line Link	Via an E-Mail Message	Via a Telephone Call	Via Regular Mail	Cash Balance	Positions and Values	Dividends Received	Transaction Record	Transaction Record History Availability		Bid / Ask Price	Last Trade	Volume	High / Low (Day)	High / Low (52-Week)	Dividend / Ex-Dividend Date						Fundamental Data	Earnings Estimates	Analyst Reports	Mutual Fund Ratings	Mutual Fund Performance Data	Portfolio Tracking	Screening	Charts	News	Web Site Offers a Trading Demo							
													1 yr.	RT							DY,RT	free	n/a	24 hours/ 7 days	pm																
													2 yrs.	RT							DY,RT NLII	varies	varies	8:00am- 6:30pm	pm																
													3 mos.	RT EM							DY,RT NLII	free	varies	24 hours/ 7 days	pm																
													1 yr.	RT							RT	free	n/a	9:00am- 6:00pm																	
													3 mos.	ED							DY,RT	free	n/a	7:00am- 7:00pm																	
													3 mos.	ID							DY	n/a	n/a	9:00am- 5:00pm																	
													since incep'n	RT							DY,RT	free	n/a	8:00am- 6:00pm	pm																
														ED							DY,RT NLII	free	free	9:00am- 5:30pm																	
													3 yrs.	RT							DY,RT	free	n/a	8:30am- 1:00am																	
													1 wk.	RT EM							RT	free	n/a	8:00am- 8:00pm																	
													3 mos.	RT							DY,RT	free	n/a	8:00am- 3:00pm	am & pm																
													18 mos.	RT							DY,RT	free	n/a	8:30am- 5:30pm																	
														RT							DY,RT NLII	free	varies	24 hours/ 7 days	am & pm																
													2 mos.	ED							DY,RT	\$19	n/a	9:00am- 5:00pm																	
													3 mos.	RT							RT, NLII	\$300 for both	\$300 for both	8:30am- 6:00pm																	
														RT							DY,RT	\$30	n/a	8:00am- 4:30pm																	
													since incep'n	RT							RT, NLII	\$110/ one time	\$160/ one time	8:00am- 8:00pm	am & pm																
													3 mos.	RT							RT	free	n/a	24 hours/ 7 days																	
													since incep'n	RT							DY,RT	free	n/a	24 hours/ 7 days	pm																

PRODUCT COMPARISON: ON-LINE DISCOUNT BROKERS

Broker Name Web Address	Phone Number	Other Trading Options		On-Line Commission Discount	Commissions (asterisk denotes price may vary depending on exchange)					Minimum Fee for No-Load Fund Transaction	Other Securities Handled						Types of Orders That Can Be Placed On-Line				
		Touch-Tone Service	Hand-Held Wireless Unit		Flat-Fee Commission Rate	Maximum No. of Shares at Flat Rate	500 Shares@ \$50 per Share	% of 500 Share Trade	Additional Charge for Limit Orders		Bonds	Mutual Funds	Options	Futures	Annuities	CDs	Offers Cash Management Account	Market & Limit	Stop	Stop-Limit	Day/Good- Until- Canceled
Mr. Stock www.mrstock.com	800/470-1896			55%	\$9.95	5,000	\$9.95	0.04%	\$2.05	n/a		✓			✓	✓	✓	✓	✓	✓	
Muriel Siebert & Co. www.siebertnet.com	800/872-0711	✓	✓	60%	\$14.95	1,000	\$14.95	0.06%	none	\$35.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Mydiscountbroker.com www.mydiscountbroker.com	888/882-5600			52%	\$12.00	5,000	\$12.00	0.05%	none	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	
myTrack www.mytrack.com	800-698-7225		✓	54%	\$12.95	no limit	\$12.95	0.05%	\$3.00	n/a			✓		✓	✓	✓	✓	✓	✓	
National Discount Brokers www.ndb.com	800/888-3999	✓	✓	41%	\$14.75*	5,000	\$14.75*	0.06%	\$5.00	none	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Net Investor www.netinvestor.com	800/638-4250			none	\$8.95	no limit	\$8.95	0.04%	none	\$35.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	
NetVest www.netvest.com	800/961-1500	✓	✓	42%	\$14.00	no limit	\$14.00	0.06%	\$5.00	\$29.00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Peremel & Co. www.peremel.com	800/666-1440	✓	✓	53%	\$18.00	2,000	\$18.00	0.07%	\$2.00	none		✓	✓		✓	✓	✓	✓	✓	✓	
Preferred Trade, Inc. www.preferredtrade.com	888/889-9178			none	\$15.00	no limit	\$15.00	0.06%	none	n/a	✓		✓			✓	✓	✓	✓	✓	
Quick & Reilly www.quickandreilly.com	800/672-7220	✓		60%	\$14.95	no limit	\$14.95	0.06%	\$5.00	\$25.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	
R.J. Thompson Securities www.rjt.com	800-273-3212	✓	✓	67%	\$5.00	no limit	\$5.00	0.02%	none	\$25.00	✓	✓	✓			✓	✓	✓	✓	✓	
Recom Securities www.trustrade.com	800/328-8600		✓	63%	\$12.95	2,000	\$12.95	0.05%	\$5.00	\$12.95		✓	✓		✓	✓	✓	✓	✓	✓	
Regal Discount www.eregal.com	800/786-9000	✓		24%	\$18.95*	5,000	\$18.95*	0.08%	none	none		✓	✓		✓	✓	✓	✓	✓	✓	
Scottrade www.scottrade.com	800/888-1980	✓		varies	\$7.00	no limit	\$7.00	0.03%	\$5.00	none	✓	✓	✓		✓		✓	✓	✓	✓	
Seaport Securities Corp. www.seaportsecurities.com	800/732-7678	✓		41%	\$19.95	1,000	\$19.95	0.08%	none	\$35.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Securities Research www.securitiesresearch.com	800/327-3156			varies	\$35.00	2,000	\$35.00	0.14%	none	\$35.00	✓	✓			✓	✓	✓	✓	✓	✓	
Sherry Bruce's State Disc't Brok www.statediscountbrokers.com	800/222-5520	✓		60%	\$14.00	5,000	\$14.00	0.06%	none	\$25.00		✓	✓		✓	✓	✓	✓	✓	✓	
Shochet Securities www.shochet.com	800/327-1536			63%	\$14.95	2,000	\$14.95	0.06%	none	n/a						✓	✓	✓	✓	✓	
StockCross www.stockcross.com	800/225-6196			30%	none	n/a	\$47.25	0.19%	\$5.00	n/a			✓			✓	✓	✓	✓	✓	

*DY=delay, ED=end of day, EM=E-mail, ID=intraday, NLII=Nasdaq Level II, RT=real time

Do Not Reduce Order Line	Open Orders	Confirmation of Order Fulfillment Delivered	Portfolio Information Available On-Line	Transaction Record History Availability	Portfolio Information Updated*	Quote Data Available						Type of Quotes (Delay, Real-Time, NLI)†	Real-Time Quote Fees (per month, rounded)	Nasdaq Level II Quote Fees (per month, rounded)	Live Broker Availability (EST)	After-Hours Trading (EST)	Free Research Offered On-Line												
						Bid / Ask Price	Last Trade Volume	High / Low (Day)	High / Low (52-Week)	Dividend / Ex-Dividend Date	Fundamental Data						Earnings Estimates	Analyst Reports	Mutual Fund Ratings	Mutual Fund Performance Data	Portfolio Tracking	Screening	Charts	News	Web Site Offers a Trading Demo				
✓	✓	✓	✓	✓	1 yr.	RT	✓	✓	✓	✓		DY,RT	free	n/a	8:30am-8:30pm		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	RT	free	n/a	7:30am-7:30pm	am & pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	since incep'n	RT	✓	✓				DY,RT	free	\$80	8:00am-10:00pm	am & pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	DY,RT	free	\$40	7:00am-8:00pm	am & pm	✓				✓	✓	✓	✓					✓
	✓	✓	✓	✓	4 yrs.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	7:00am-8:30pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:30am-5:30pm							✓	✓	✓					✓
✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	24 hours/7 days	pm	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	18 mos.	ID	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:30am-5:00pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	since incep'n	RT	✓	✓	✓	✓		DY,RT	free	n/a	8:30am-8:00pm														✓
✓	✓	✓	✓	✓		RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	24 hours/7 days		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	18 mos.	n/a						RT	free	n/a	8:30am-5:00pm														✓
✓	✓	✓	✓	✓	2 mos.	ED	✓	✓	✓	✓	✓	DY,RT	\$19	n/a	9:00am-5:00pm		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	6 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	7:30am-7:30pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	1 yr.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	7:00am-11:00pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	6 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:30am-5:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	5 mos.	ED	✓	✓	✓	✓	✓	DY,RT	free	n/a	9:30am-4:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	1 yr.	RT	✓	✓	✓	✓	✓	DY,RT	\$30	n/a	8:30am-5:00pm		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	✓	✓		✓	3 mos.	RT	✓	✓	✓	✓		DY,RT	free	n/a	9:00am-5:00pm			✓						✓	✓				✓
✓	✓	✓	✓	✓	12 yrs.	ED	✓	✓	✓	✓		DY,RT	free	n/a	8:30am-5:00pm									✓	✓				✓

PRODUCT COMPARISON: ON-LINE DISCOUNT BROKERS

Broker Name Web Address	Phone Number	Other Trading Options		On-Line Commission Discount	Commissions (asterisk denotes price may vary depending on exchange)					Minimum Fee for No-Load Fund Transaction	Other Securities Handled					Types of Orders That Can Be Placed On-Line					
		Touch-Tone Service	Hand-Held Wireless Unit		Flat-Fee Commission Rate	Maximum No. of Shares at Flat Rate	500 Shares@50 per Share	% of 500 Share Trade	Additional Charge for Limit Orders		Bonds	Mutual Funds	Options	Futures	Annuities	CDs	Offers Cash Management Account	Market & Limit	Stop	Stop-Limit	Day/Good-Until-Canceled
Strong Investments www.strong.com	800/328-4854	✓		33%	\$24.95	1,000	\$24.95	0.10%	none	\$35.00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Summit Financial Serv Gp www.sfg.com	800/631-1635	✓		14%	\$29.95	1,000	\$29.95	0.12%	none	n/a	✓	✓				✓	✓	✓	✓	✓	✓
SureTrade www.suretrade.com	401/642-6900	✓	✓	73%	\$7.95	no limit	\$7.95	0.03%	\$2.00	none	✓	✓	✓			✓	✓	✓	✓	✓	✓
T. Rowe Price Brokerage www.troweprice.com	800/638-5660	✓		43%	\$19.95	1,000	\$19.95	0.08%	none	none		✓	✓			✓	✓	✓	✓	✓	✓
TD Waterhouse Securities www.tdwaterhouse.com	800/934-4443	✓	✓	65%	\$12.00	5,000	\$12.00	0.05%	\$3.00	none	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The Financial Café www.thefinancialcafe.com	877-600-6410	✓		100%	\$0.00	no limit	\$0.00	0.00%	\$14.75	varies	✓	✓	✓			✓	✓	✓	✓	✓	✓
Trading Direct www.tradingdirect.com	800/925-8566	✓	✓	67%	\$9.95	no limit	\$9.95	0.04%	none	\$15.95		✓	✓			✓	✓	✓	✓	✓	✓
U.S. Rica Financial www.usrica.com	888/887-7422			86%	\$4.95	500	\$4.95	0.02%	none	n/a		✓				✓			✓	✓	✓
USAA Brokerage Services www.usaa.com	800/531-8343	✓		31%	\$24.00	1,000	\$24.00	0.10%	none	\$40.00		✓	✓			✓	✓	✓	✓	✓	✓
Vanguard Brokerage Serv www.vanguard.com	800/992-8327	✓		56%	\$20.00	1,000	\$20.00	0.08%	none	\$35.00		✓	✓		✓	✓	✓	✓	✓	✓	✓
Wachovia Investments www.wachovia.com	800/922-9008	✓		25%	\$29.95	1,000	\$29.95	0.12%	none	\$40.00		✓	✓			✓	✓	✓	✓	✓	✓
Wall Street Access www.wsaccess.com	800/925-5781	✓		44%	\$25.00	5,000	\$25.00	0.10%	none	n/a			✓			✓	✓		✓	✓	✓
Wall Street Electronica www.wallstreee.com	888/925-5783	✓	✓	none	none	n/a	\$29.95*	0.12%	none	\$35.00	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Wall Street Equity www.wsei.com	800/321-4877			20%	\$12.00	5,000	\$12.00	0.05%	none	n/a						✓			✓		✓
Web Street Securities www.webstreet.com	800/932-8723	✓		none	\$14.95	no limit	\$14.95	0.06%	none	none		✓	✓		✓	✓	✓	✓	✓	✓	✓
Wells Fargo Investments www.wellsfargo.com	800/433-0738	✓		28%	\$24.95	1,000	\$24.95	0.10%	none	\$27.96		✓	✓		✓	✓	✓	✓	✓	✓	✓
York Securities www.yorktrade.com	800/221-3154	✓		10%	none	n/a	\$38.70	0.15%	none	n/a			✓			✓	✓	✓	✓	✓	✓
Your Discount Broker www.ydb.com	800/800-3215	✓		14%	\$29.95	5,000	\$29.95	0.12%	\$5.05	none		✓	✓			✓	✓	✓	✓	✓	✓

*DY=delay, ED=end of day, EM=E-mail, ID=intraday, NLII=Nasdaq Level II, RT=real time

Do Not Reduce Versus Purchase	Open Orders		Confirmation of Order Fulfillment Delivered			Portfolio Information Available On-Line				Quote Data Available						Free Research Offered On-Line																						
	Examine & Change Cancel	Via an On-Line Link	Via an E-Mail Message	Via a Telephone Call	Via Regular Mail	Cash Balance	Positions and Values	Dividends Received	Transaction Record	Transaction Record History Availability	Portfolio Information Updated	Bid / Ask Price	Last Trade Volume	High / Low (Day)	High / Low (52-Week)	Dividend / Ex-Dividend Date	Type of Quotes (Delay, Real-Time, NLIIT)	Real-Time Quote Fees (per month, rounded)	Nasdaq Level II Quote Fees (per month, rounded)	Live Broker Availability (EST)	After-Hours Trading (EST)	Fundamental Data	Earnings Estimates	Analyst Reports	Mutual Fund Ratings	Mutual Fund Performance Data	Portfolio Tracking	Screening	Charts	News	Web Site Offers a Trading Demo							
✓	✓	✓	✓	✓	✓	✓	✓	✓	45 days	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	24 hours/ 7 days		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	RT	✓	✓	✓	✓		DY,RT	free	n/a	8:30am- 5:00pm		✓	✓								✓	✓							
✓	✓	✓	✓	✓	✓	✓	✓	✓	1 yr.	RT EM	✓	✓	✓	✓	✓	DY,RT	free	n/a	7:00am- 7:30pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:00am- 10:00pm		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓				
✓	✓	✓		✓	✓	✓	✓	✓	3 mos.	ED	✓	✓	✓	✓	✓	DY,RT	free	n/a	24 hours/ 7 days	pm	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓				
	✓	✓	✓	✓	✓	✓	✓	✓	since incept'n	RT	✓	✓	✓	✓	✓	DY,RT NLII	free	\$30	5:45am- 7:00pm	am & pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
	✓	✓	✓	✓	✓	✓	✓	✓	1 yr.	RT	✓	✓	✓	✓		DY,RT	free	n/a	8:30am- 5:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	✓	✓	✓	✓	✓	✓	✓	✓	7 days	ID	✓	✓	✓	✓	✓	DY,RT	free	n/a	9:00am- 5:00pm		✓	✓	✓							✓	✓	✓	✓	✓	✓			
✓	✓	✓	✓	✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	7:00am- 11:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:00am- 8:00pm	pm	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:00am- 6:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	ED	✓	✓	✓	✓		DY,RT NLII	free	\$10	7:00am- 9:00pm		✓	✓	✓							✓	✓	✓	✓	✓	✓	✓		
	✓	✓	✓	✓	✓	✓	✓	✓	since incept'n	RT	✓	✓	✓	✓	✓	DY,RT NLII	free	varies	8:30am- 6:00pm	pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	RT	✓	✓	✓	✓	✓	RT	free	n/a	8:30am- 5:00pm																			
✓	✓	✓	✓	✓	✓	✓	✓	✓	2 mos.	n/a	✓	✓	✓	✓	✓	DY, RT NLII	free	\$10	24 hours/ 7 days		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	✓	✓	✓	✓	✓	✓	✓	✓	13 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	24 hours/ 7 days		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓	✓	✓	1 mo.	ED	✓	✓	✓	✓	✓	DY	n/a	n/a	9:00am- 5:00pm		✓	✓					✓			✓	✓	✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓	✓	✓	18 mos.	RT	✓	✓	✓	✓	✓	DY,RT	free	n/a	8:30am- 5:00pm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

(continued from p. 11)

ity to a brokerage firm's trading system. On-line brokers maintain a staff of live brokers that are there to take orders over the phone. This service is different than a touch-tone function in that you are actually speaking with a real person on the other end of the line. In some cases, commissions are higher for these broker-assisted trades.

After-Hours Trading

Some of the on-line brokers in this year's comparison offer their clients access to the markets before the open or after the close via after-hours trading sessions.

After-hours trading utilizes computerized order matching systems known as Electronic Communications Networks (ECNs). These sessions are completely independent from standard market hours trading—the trading interface is usually different, and only special after-hours representatives can take your orders. After-hours sessions mostly occur after the market closes and in some cases early in the morning, before the markets open. After-hours sessions start at 4 p.m., 4:15 p.m., or 4:30 p.m. Eastern Standard Time, and the latest a session lasts is 8 p.m. Eastern Standard Time.

A certain degree of liquidity must be present for a security to be traded during these after-hours sessions—most Nasdaq 100 and heavily traded New York Stock Exchange stocks are eligible candidates. There are limitations on the types of orders that can be placed and the size of those orders. The specific guidelines and rules differ from broker to broker regarding after-hours trading. The key for the individual investor is whether or not they can get another investor to fill the other end of the trade and at a favorable price.

After-hours trading is a relatively new service. At this time, 40% of on-line brokers—30 total—allow their customers to trade after-hours. This is a significant increase from the 18 firms reported last year. It is a new world for the mar-

kets in general, and these capabilities and services will continue to evolve in the coming year.

Research

To provide more detailed and consistent information on the free research on-line brokers provide, we have included a list of services and capabilities. The categories of free research offered on-line include fundamental data, analyst reports, screening, charts, and news.

Trading Demo

Most of our readers are familiar with how demo versions of software applications work. You, as a potential user, request a demo copy, which allows you to test out the features and functionality and gauge the ease-of-use of a program before making a commitment to buy it.

Many on-line discount brokers are taking the same approach with regard to the proprietary trading modules on their Web sites. Basically, if a broker offers a trading demo, you have access to a sample of the site's trading area where you can test drive the site and see how user-friendly the trading module is. Some demos allow you to enter information, click buttons, and experience the order fill process, while other demos are simply slide shows that walk you through the process.

In any case, this is an invaluable feature that unfortunately is not offered by all the brokers in this comparison.

The column reporting those firms that offer a trading demo appears at the end and wraps up the comparison grid.

Support

If you are in the process of reviewing several on-line discount brokers as a possible trading service provider, the issues covered here will give you a good foundation on which to build—a starting point in your quest for selecting an on-line discount broker. One area that all potential customers should consider, and that we were unable to quantify in our comparisons, is the type and qual-

ity of support you can expect to receive when you encounter a problem or have a question regarding your on-line brokerage account.

When test-driving any broker, focus on the firm's phone support and E-mail responses. Be sure to call prospective brokers and ask the representative any and all questions, request literature detailing their services and fees, E-mail the firm your same questions, and be sure to browse their Web site to see what kind of information you can glean from it. Compare the information you have received from each of these sources for consistency.

Also, consult friends and peers with experience in on-line trading or those who have just shopped on the Web before. And finally, check out the on-line trading discussions in chat rooms and on message boards.

Voicing Your Opinions

Three years ago, *Computerized Investing* and the *AII Journal* got together and created a joint questionnaire for members focusing on on-line discount brokers. This questionnaire, located on the AII.com Web site, gives our readers a chance to share their trading experiences and observe what others are thinking. The questionnaire has been very popular; we are pleased with the response over the last couple of years.

If you have worked with an on-line brokerage firm in this year's comparison, please take a minute to log onto AII.com and answer the few questions and share your experiences. The questionnaire can be found in the Computerized Investing section attached to this article and also under Member Surveys. Again, as in years past, results will be posted and continually updated and all responses will remain anonymous.

Kenneth J. Michal is associate editor of Computerized Investing.

Trading Bonds On-Line

Most investors are familiar with the marketplace for stocks and with the way brokerage firms conduct stock transactions. By and large, brokerage firms act as agents, going into the marketplace to purchase or sell a stock on their client's behalf and receiving a commission for doing so. Firms can also act as dealers, buying and selling from their own inventory. When this occurs, a confirmation must disclose this information. When a firm acts as a dealer, its profit is the difference between the price it paid for the stock and the price at which it sells the stock. For most stocks, heavy competition and the wide availability of information generally keeps these price differentials, or spreads, close.

In contrast, most investors are less familiar with the bond marketplace. When an individual investor enters the bond market, the brokerage firm is always acting as a dealer, and the firm's profit is the difference between the cost of the bonds and the price the customer pays. The brokerage firm sets the price for the bonds based upon the going price quoted for other bonds with similar maturity dates, credit ratings, interest rates, and any call provisions. Even these comparable factors do not make for a clear-cut price. There is still a significant gray area. Also, brokerage firms are influenced by profit when choosing which bonds to offer.

Stocks are sold by full-service and discount brokers. Bonds, however, are sold by full-service brokerage houses and bond houses. There are no "discount" bond brokerage houses. The term "discount broker" applies to brokers that discount the cost of purchasing a stock (commissions) compared to a full-service firm. This discount principle does not transfer to bonds since bonds do not trade with commissions. Rather, commissions for bonds are built into the quoted price for the bond by the brokers.

Most discount brokers do not make a market in bonds, meaning that the discount broker does not underwrite any new issues and does not purchase bonds in the secondary market for their own inventory. A few larger firms do, like Charles Schwab and Fidelity. Some discount brokerage houses do sell municipal bonds for clients, for which they charge a fee, because their clients want the service. This gives the impression that they are only earning the stated fee. In actuality, they are earning a spread between the purchase and sale prices, in addition to the fee. Therefore, it may cost more to purchase bonds from a discount broker than a full-service broker because the full-service broker generally does not charge a fee in addition to the spread.

In the past it was very difficult for an individual investor to verify bond pricing information, or even compare prices between brokerage firms. Investors simply went with the price their broker quoted them for that bond. Today, with the advent of the Internet, individual investors have access to more bond information, data, and current quotes than ever before. Right now on the Web, investors can conduct extensive searches for bonds, check current bond prices, access bond market news, and even purchase bonds directly. With the new breed of on-line bond brokers, this process of buying and trading bonds has never been more accessible for retail customers.

Below is a listing of several Web sites that provide bond data, news, and information as well as offer on-line bond trading capabilities.

BondAgent.com

www.bondagent.com

BondAgent.com is one of the original on-line brokers to focus solely on bond issues. At the site, users can access over 10,000 corporate, municipal, and Treasury bonds. Research tools include news and commentary, a portfolio consultation module, various calculators, and an education center.

Bondpage.com

www.bondpage.com

Another on-line bond broker, Bondpage.com, allows users to trade corporate, municipal, and zero-coupon bonds, as well as Treasuries. You can also sell CDs (certificates of deposit) and buy primary and secondary CDs. The site also features a Bond Finder searching tool that allows users to select the bonds that best meet their needs and requirements.

Bonds Online

www.bondsonline.com

At the Bonds Online Web site you can access over 12,000 current bond offerings, including corporate and municipal bonds, Treasuries, STRIPS (separate trading of registered interest and principal of securities), and CMOs (collateralized mortgage obligations). Links are provided to news, yield spreads, calculators, and a library of educational articles and newsletters. The site also includes several bond quote pages and five different bond search tools.

eBondTrade

www.ebondtrade.com

The eBondTrade Web site's primary focus is municipal bonds, and trades are made directly from its own inventory. The site also offers new bonds as soon as they are issued. Here, investors buy the municipal issues they want on-line and have them delivered directly to their existing brokerage accounts. Bond market research and news are available.

MuniDirect

www.munidirect.com

MuniDirect is another on-line bond broker whose focus is solely on municipal bonds. The site features a muni-bond search module and a MuniDirect Auction area where investors can name their price for the municipals they want to purchase or sell—bidding on municipal bonds or selling them to the highest bidder via an on-line auction setting.

Tradebonds.com

www.tradebonds.com

The Tradebonds.com on-line bond brokerage site allows investors to trade corporate, municipal, and zero-coupon bonds, CMOs, Treasuries, and CDs. Tradebonds.com features free daily and weekly E-mail alerts. The site also provides links to news, commentary, and various calculators.