MAY 2002 ISSUE

Overlooking THE OBVIOUS

Some traders become so enamored with complicated formulas and statistics, they forget these are not ends themselves, but tools that should serve the goal of determining why, when and how much to buy or sell.

They often associate complexity with intelligence, taking comfort in multilayered strategies or indicators intended to bring predictability and order to trading. Ironically, such traders might overlook the obvious lessons sophisticated analysis can teach them about market behavior and end up getting lost in a blizzard of numbers.

Manuel Ochoa has done more than his share of extensive historical testing and quantitative analysis, which ultimately went into the trading systems he uses in the stock and futures markets. Rather than directing him toward complicated trading models and obscure indicators, his research has led him to some simple conclusions about the way markets work and the proper way to trade them. His approach has allowed him to remain in the black during the bear market, when many other hedge fund managers and futures traders have stumbled.

While trading can be done on a completely mathematical, mechanical basis (and probably should be by many traders), experience and discretion can enhance even the best trading systems. Ochoa's trading revolves around a core set of mechanical systems, but he applies them with discretion, according to the insight he has gained over years in the markets. He shares his perspective on trading in this month's Active Trader Interview, "Manuel Ochoa: Commonsense trading".

One of Ochoa's observations is that you have to be able to identify the current market condition to know which tools to use in a strategy. In the Trading Strategies section, Tom Bierovic explains a strategy called "Powertool" that combines unique trend and momentum indicators that work better together than they do on their own. Similarly, in "When two oscillators are better than one," Thom Hartle looks at two indicator warhorses — the relative strength index (RSI) and the stochastic oscillator — and shows how blending the two calculations does a better job of highlighting overbought and oversold levels than either of the component indicators.

You have to be able to identify the current market condition to know which tools to use in a strategy.

To get a feel for how these or any other trading approaches might fare in the real world, read "Looking for a target," and "Facing the facts of risk and money management," which look at the most important statistical and practical relationships that ultimately determine profitability.

If you asked most traders what the biggest change has been in the market over the past two years, nine out of 10 would probably say the switch from a bull to a bear market. However, Nasdaq and SEC rule changes that significantly altered the trading landscape have, for the most part, slipped under the radar because of worries about the market's health. "Today's market: Level playing field or slippery slope" provides inside perspectives on such issues as SuperSOES, decimalization and fee changes that have been implemented over the last year.

If you're wondering what else might change in the near future, read "Taking a direct look". Associate editor Jeff Ponczak looks at the state of direct-access trading and how things have changed since the days when it seemed like there were more direct-access brokerages than Starbucks outlets. Today, the landscape is dramatically different, and the consolidations that have taken place (and continue to do so) will impact a trader's choices for years to come.

Mark Etzkorn, Editor-in-chief

THIS MONTH'S Contributors

▼ **Thomas A. Bierovic** (tbierovic@aol.com) is president of the Synergy Trading Group in Palm Beach Gardens, Fla., and author of *Playing For Keeps in Stocks & Futures* (John Wiley & Sons, December 2001). He has been trading successfully since 1971, and has taught technical trading at conferences throughout the United States and in 40 foreign countries.

▼ **Thom Hartle** is a private trader and president of Market Analytics Inc. In his career spanning more than 20 years, Hartle has been a commodity account executive for Merrill Lynch, vice president of financial futures for Drexel Burnham Lambert, trader for the Federal Home Loan Bank of Seattle and editor for nine years of *Technical Analysis of Stocks &Commodities* magazine.

▼ **Michael Harris** (mharris@tradingpatterns.com) is president of TradingPatterns.com (www.tradingpatterns.com), a firm specializing in the development and sale of mechanical trading systems for futures and stocks. He is also managing director of Harrison Investments Inc. (www.harrisontrading.com), an off-shore money management and hedge fund consulting firm. He has been a trader and system developer for the past 15 years. Harris is author of *Short-term Trading with Price Patterns* and *Stock Trading Techniques based on Price Patterns* (both from Traders Press Inc.).

▼ **David A. Baker** (davidb@strategictraders.com) is a professional trader and the president of StrategicTraders.com, a nightly service designed to help traders develop daily strategies. He is also the CEO of Capital Trading Group, a company that both trains and helps to fund people interested in day trading for a living. Baker is featured as one of 12 traders in the book *The Best: Conversations with Top Traders*.

▼ **Dennis Meyers** (info@MeyersAnalytics.com) has a doctorate in applied mathematics in engineering. He is a member of the Chicago Board Options Exchange (CBOE), a private trader, and president of Meyers Analytics (www.MeyersAnalytics.com). His firm specializes in consulting for financial institutions and developing publicly available analytical software for traders.

▼ **Robert A. Green** (green@greencompany.com) is a CPA and his firm, GreenTraderTax.com, consults traders on tax solutions, reviews or prepares their tax returns, and sets up business entities and retirement plans. For more information, visit www.greentradertax.com or call (212) 658-9502.

▼ **Thomas Stridsman** (www.thomasstridsman.com) spent more than four years as a technical analyst and systems-trading expert for both *Active Trader* and *Futures* magazines. Previously he served in similar capacities with several European periodicals and news agencies. He holds degrees in economics, statistics and social psychology, and is the author of *Trading Systems that Work* (McGraw-Hill, 2000).

▼ **Kiara Ashanti** is a Florida-based writer, editor and private trader. He has been in the financial industry for the last six years and trading the last three.

▼ **Robert Sales** is the author of *Trading Strategies for Direct Access Trading: Making the Most Out of Your Capital* (McGraw-Hill, May 2001). A veteran business technology journalist, he has written on a wide array of topics including the rise of ECNs, the demutualization of exchanges and the emergence of direct-access technology at buy-side institutions. Sales, who has served as both a moderator and a speaker on various electronic trading panels, is also the former editor-in-chief of Electronic Trading Week, an online weekly newsletter focused on trading automation at financial services firms.

Jumping off the bandwagon

The Bandwagon trade in the Trading System Lab of your March issue apparently performs so poorly because it attempts to go long substantially after "explosive developments" have already been acted upon by insiders.

Perhaps this would be a good contrarian strategy: Go short, instead of long, realizing that after the explosive move up, the insiders are now selling and the stock will decline. Can you run the system again but instead of taking a long position, go short?

Thanks for a great magazine.

— Rod Wilson

We'll take a look at it and publish the results.

Trading and investing

I would simply like to say that you have a great staff of professional writers. Peter Navarro's work on the econometric front is of the very highest caliber. He reduces the issues down to very understandable terms and makes sense out of a highly complex subject.

I hope he will continue offering his substantial wisdom in the future. I have been very impressed with his contributions.

— Bob Pelletier, CEO of CSI

We have him chained to a PC in the basement, so we think he'll be around for a while.

Spread 'em

In "Extra credit (spreads)" by Kevin Lund (*Active Trader*, February 2002), there is a box labeled Table 1 on page 39. In this table, under "Bull put credit spread" it shows that if the stock moves up or sideways, a profit will occur. If the stock moves down, a profit "may" occur. This implies *all* bull put credit spreads will behave this way.

But in the second example of a bull put credit spread (on page 40, bottom left), the deep-in-the-money (DITM) bull put credit spread, the stock has to move up more than 20 percent before a profit is realized. If the stock moves sideways, down, or up only a little, a loss will occur. This is a direct contradiction of Table 1.

TABLE 1 COMPARING APPROACHES

Under the right circumstances, credit spreads have some distinct advantages over outright stock and option positions.

Bull put credit spread	
Stock move	***Profitable***
Up	Yes
Down	Maybe
Sideways	Yes
Probability of profit > 67 percent	

Don't you think Table 1 is misleading, in that it implies all bull put credit spreads have a 67 percent chance of profitability?

— J P Kenny

Kevin Lund responds:

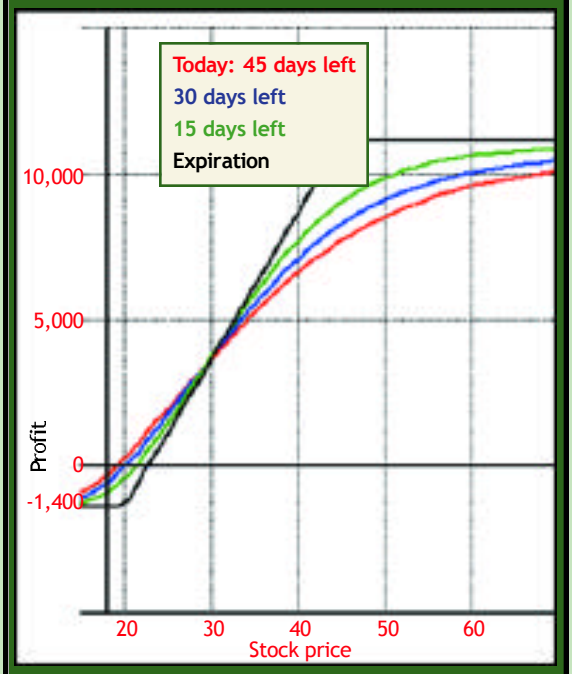
You're right: DITM credit spreads do not behave the same way as traditional credit spreads, which are at-the-money (ATM) or out-of-the-money (OTM). Credit spreads are a flexible trading instrument that can be used many ways. The table you think is misleading corresponds specifically with the discussion of traditional credit spreads at the beginning of the article, as is pointed out.

DITM credit spreads were introduced later in the article specifically as a variation of the traditional credit spread, as were all of its inherent differences. The differences in volatility setups and how each becomes profitable were also mentioned, distinguishing one from the other. But perhaps there could have been a bit more clarity on this.

However, your comment that the stock needs to move 20 percent before the option trade is profitable is incorrect. Take a look again at the risk curve on the DITM example of QLGCs. The trade is immediately profitable, as indicated by the red line of the risk curve in Figure 3. Because its delta is near 100, it acts like a stock almost dollar for dollar and is immediately profitable.

FIGURE 3 PROFIT SNAPSHOT

The lines show the profit potential of a credit spread at different points in time



Source: www.optionetics.com

Beyond system testing

I loved your attempt in "Beyond strategy testing" (*Active Trader*, March 2002) to quantify minimum trades as well as maximum consecutive losses — bravo! However, I wonder about the actual implementation of these ideas: Is the trading time frame the actual average time in trade, or something else?

It's hard to believe it will only take seven weeks of back-testing to verify the validity of a system that trades three time per week for an average time in trade of one day. And a system that trades three times per day with an average time in trade of 15 minutes will require 520/3 = 173 days, or 30-plus weeks of back-testing.

I think your N_b factors are improper and should be logarithmic, not linear, relative to time. The same goes for the maximum consecutive losses figure: even 10 is a bit much, and 31 is unthinkable. I think this relationship should be based on the number of trades per day, not the absolute number of trades.

— M. Simms

Mike Harris responds:

If Aimplies B that does not always mean that B implies A.

In other words, what I'm saying in the article — in the context of your example — is that in the case of trading 15-minute intervals, you need at least 520 trades. You may get that with 40 weeks of data or with 400 weeks of data.

If you get fewer trades than this, however, you must increase the amount of data to reach the minimum number. If you have a system that generates many more trades, as in your example, there is no problem.

However, do not forget the issue of profitability: Asystem must generate a certain number of trades and be profitable in the time span considered.

As far as consecutive losers, I agree 31 is a lot (in the case of 1,000 trades). But this figure is a maximum, and it is not necessary for it be acceptable. This is a highly non-linear relationship, not a linear one.

The factor in the formula can also be adjusted depending on your risk parameters. For instance, I risk 1 percent of my initial trading capital on each trade. If I get 31 consecutive losers right from the start, I would be down 31 percent.

These rules are more useful in choosing between comparable systems, rather than as absolute measures.

I am glad, however, the article can bring some good thinking in this subject.

Any suggestions for alternative rules are most welcome.

Questions about an article or trading issue? Send them to chatroom@activetradermag.com. *Active Trader* reserves the right to edit letters for clarity and length.

Minimum trades rule:

$$N_m \geq 20 * f * N_b \ ^*$$

where

f is a factor whose default value is 1 (can be adjusted to create looser or stricter criteria for the number of trades required)

N_b is the number of bars in the trading time frame.

TABLE 2 MINIMUM TRADES RULE

Historical testing must be performed on a minimum number of trades before the tests can be considered reliable.

Trading time frame	N_b	N_m
Daily	1	20
Hourly	6.5	130
Half-hour	13	260
15-minute	26	520
Five-minute	78	1,560
One-minute	390	7,800

Maximum consecutive losers ("consecutive losers square root criterion"):

$$C_L \leq f * \sqrt{N} \ ^*$$

where

f is set to one by default, but it can be adjusted to fit a system developer's own criteria.

TABLE 3 SQUARE ROOT CRITERION

Traders — and trading systems — can only handle so many consecutive losers. The square root criterion can help you determine the maximum number for your strategy.

Number of trades N	Maximum consecutive losers allowed
20	4
50	7
100	10
1000	31

**The greater-than-or-equal-to and less-than-or-equal-to signs inadvertently appeared simply as greater-than and less-than signs in the March story. Active Trader regrets the error.*

They'll be watching

NASD offers analyst guidelines

Since the collapse of the tech bubble, thousands of people have lost millions of dollars in the market, waiting for a high-flying stock to turn around and reach its previous lofty levels. While the pain of losing money is bad enough, it's made worse in many cases by knowing that a stock analyst — someone likely making six figures — has maintained a positive rating on the stock, leading the investor to hold the stock despite its plummeting price.

Because of situations like this, the securities industry began to take a closer look at analyst independence. While it became obvious that many analysts had ulterior motives in recommending a stock, there was little or nothing anybody could do to prevent it. The NASD is trying to change that.

In early February, the organization proposed rules governing the recommendations made by analysts. The rules were made with guidance from Congress and the Securities and Exchange Commission, and in conjunction with the New York Stock Exchange. The NYSE is expected to propose similar rules.

If and when the rules are approved, the NASD will have the ability to take disciplinary action against analysts who fail to comply. The rules fall into five categories: compensation, relationship with investment banking, promises of favorable research, personal trading and ownership of securities.

A major concern is that an analyst's recommendations are based not on objective research but on coercion from the investment banking department of the analyst's firm. Wall Street firms make a large percentage of their profits off investment banking, and a company that receives a negative rating on its stock is less likely to do business with that particular firm.

Under the proposed rules, an analyst's compensation may not be tied to specific investment banking transactions done by the analyst's firm, and any compensation that is partially based on investment banking must be noted in research reports. And, when an analyst makes a recommendation in public (i.e., on a TV or radio show), he or she must mention if the company whose stock is in question is a client of the analyst's firm. Additionally, no analyst may be supervised by a firm's investment banking division.

The new proposals also mandate quiet periods after IPOs or secondary offerings. Any firm acting as manager or co-manager of an offering must wait 40 days (IPO) or 10 days (secondary) before issuing a report on that company. Firms are also forbidden from using the prom-

The state of the industry

Taking a direct look

While February is a month best known for groundhogs and valentines, it also holds some significance for the direct-access industry.

In February 2000, Charles Schwab bought direct-access firm CyBerCorp (now known as CyberTrader). The deal, valued at almost $500 million at the time, brought direct-access trading into the mainstream.

About a year later, Ameritrade's purchase of direct-access firm TradeCast put the spotlight back on direct access and spawned a flurry of moves in 2001.

February is also the month for the Online Trading Expo in New York City. While there's also an Online Trading Expo in the Los Angeles area in August, the proximity of Manhattan to some of the world's biggest trading and financial firms makes the NYC show the gauge by which many judge the state of the industry.

To that end, it's no surprise that attendance at the 2002 show was down about 20 percent from a year prior. Tim Borquin, co-founder of the Expo, says that about 4,300 people attended the show compared to 5,400 in 2001. However, it appears that what the crowd may have lacked in quantity, it made up for in quality.

"We may not have had as many people," says Jay McEntire, CEO of ProTrader. "But we got more qualified leads than we did a year ago."

Even though the bull market fizzled out early in 2000, the glow of it was still warm enough at the 2001 show to draw many people who had visions of day-trading their way into untold fortune. Many of these people, though, didn't know the difference between a limit order and an order of fries.

The consensus among exhibitors is that the crowds in 2002 were definitely more intelligent and savvy than a year ago, and that was a big benefit to firms already entrenched in the consciousness of traders.

"Response in our booth has certainly been as strong as or stronger than other shows," says Stuart Townsend, who along with wife MarrGwen founded Townsend Analytics. Townsend Analytics produces RealTick, a widely used direct-access technology platform.

While firms such as Terra Nova (a division of Townsend) and CyberTrader have superior name recognition, and others such as Ameritrade Pro (formerly TradeCast) and ProTrader (which is owned by Instinet) have the backing of major financial firms, the future of some other firms isn't as crystal clear.

Several firms that had a major presence at the 2001 show had limited or no

ise of favorable research or the threat of withholding it to get business.

Another concern is that analysts rate stocks based on their own personal holdings. The new rules would prohibit analysts or any members of their household from taking advantage of pre-IPOs if the company going public is in the same type of business covered by the analysts. Also, no trades may be made in a stock covered by an analyst's research report for 30 days prior and five days after the issuance of a report, and no trades will be allowed that are in conflict with an analyst's current position (i.e., if an analyst has a buy rating on Oracle, neither the analyst nor anyone in his or her household will be allowed to sell Oracle for as long as the analyst's recommendation stays the same).

If the analyst or a member of his or her household already has an investment in a researched company, that information must be disclosed at each public appearance by the analyst and in the research report. And, if a firm owns 1 percent or more of any equity class of a company covered by one of its analysts, that disclosure must be made.

The rules are subject to a 30-day comment period before the SEC considers them, so it's unclear when they might get final approval. In any event, NASD Chairman and CEO Robert Glauber promised they will benefit the investing community.

"These proposed rules will strengthen the industry's own business practices and ethical standards," he says. "They will be enforced by the NASD with serious sanctions, including stiff fines and even expulsion from the industry."

presence at the 2002 event. MB Trading, which released a new version of its software days before the expo, opted against a booth of its own and instead shared with some data providers. A spokesman for MB says the company's decision to eschew a booth was because, "We felt that the money we spent on it was not really returned."

Blackwood Trading did not have a booth either, and rumors swirled at the show as to whether the firm was facing a huge cash crisis. Blackwood denies this, and director of marketing Karen Genicola, who was at the show, says the company is focusing more on institutional traders and decided against a booth.

Also absent was Tradescape, the largest direct-access firm in terms of trading volume. Tradescape generally has the most active of the active traders and, as a result, does not advertise much. However, the company did attend in 2001, and CEO Omar Amanat was seen walking around the exhibit hall this year.

Granted, hauling loads of equipment and personnel to New York for four days can cost tens of thousands of dollars, and there are many legitimate reasons to stay away. Yet, many firms *are* willing to absorb those kinds of costs.

In any event, it's safe to say the world of direct access is vastly different than it was 12 months ago.

"In the past year, trading has become far more difficult and there are fewer people who are successful," says Beth Stelluto, Schwab's senior vice president of active trader marketing. "There's a coming to the fore of the strategic trader, the trader who has studied the market. While they may not have professional status, they have a deep, rich understanding of the way they trade. Those are the traders we're seeing and talking to, and those are the traders making a demand in the market."

The market's salad days of 1998-2000 caused a huge increase in the number of traders and, subsequently, the number of direct-access firms. Just as many of the traders have fizzled out, many of the trading firms went belly up or consolidated with other firms. Some, though, are still hanging on. The pool of potential traders is beginning to grow again, albeit slowly, so for companies on the fringe, 2002 could be a make-or-break year.

"The firms that are going to persist are going to be the ones that are delivering the best services and value to clients," Stelluto says. "Whether it's five, 10 or 20 [total companies], I don't know, but they will be client-driven."

Adds MarrGwen Townsend, "There's a role for the niche broker. They don't have to be big. They can concentrate on great service or a particular kind of service. I don't see that going away."

There's little doubt, though, that it's more difficult to survive as an independent broker (i.e., one not owned by a bigger conglomeration).

Bobby Earthman, TradeCast founder, says being under the Ameritrade umbrella provides great name recognition, and it has allowed him to focus more of his efforts on software development, which is his first love. And ProTrader's McEntire admits his tech staff would be half of what it is without Instinet.

Of course, as in any business, the top firms must work just as hard as those that are struggling. It's one thing to get to the top of an industry; it's another entirely to stay there.

Schwab has long been a player in the active trader space, but its acquisition of CyberTrader gave the company entry into the world of direct access. Since then, it has created its own direct-access software (using CyberTrader's technology as a base) and continues to exist side-by-side with CyberTrader.

"CyberTrader and Schwab are two distinct businesses that serve two distinct markets," Stelluto says. "We have hundreds of thousands of Schwab clients who trade actively. They are first and foremost Schwab clients. Some of them are appropriate for CyberTrader, and some have gone over to CyberTrader and we are happy that they have.

"But Schwab is the breadth of the investment market, while at CyberTrader it's much more of a deep trading mentality. I don't see any reason for CyberTrader to be merged into the Schwab brand. I see a strong reason for both to persist and leverage each other's capabilities."

The Townsends have so many companies using their RealTick technology, they often have to check a list to see for sure if a particular firm is using it. While their name and reputation in the industry is solid, they know the worst thing they could do is rest on their laurels.

To that end, they're branching out into European exchanges, beginning a foreign exchange initiative overseas and fixed-income trading in the United States.

"We've seen less competitors on the technology front and more companies willing to talk about licensing software rather than developing it internally," MarrGwen Townsend says. "Obviously, people are shooting at us. But when we started, we said the one thing about a software business is that you're never done. As long as we keep moving, hopefully our competitors will shoot at where we are now, and we'll be somewhere else when they get there."

Gotcha!

SEC uses fake Web site to caution investors

Would-be market players who, in January, stumbled on to a Web site soliciting investors discovered the dangers of trusting claims on the Internet.

The site, www.mcwhortle.com, promotes a company that has just developed a hand-held device that detects biohazards. The Web site says the company is about to launch its IPO and is looking for investors, and any investments will be "worth more than 400 times the initial investment."

The excitement of those who thought they were getting in on the ground floor dissipated after a few mouse clicks: The company does not exist. McWhortle Enterprises was created by the SEC to warn people of Internet scams.

There are bogus testimonials on the site, a phony press release and an interview with the "CEO" of the faux company. If you want to see the financial statement of the company, or you show an interest in investing in the pre-IPO, you're taken to a page that reads at the top, "If you responded to an investment idea like this … you could get scammed."

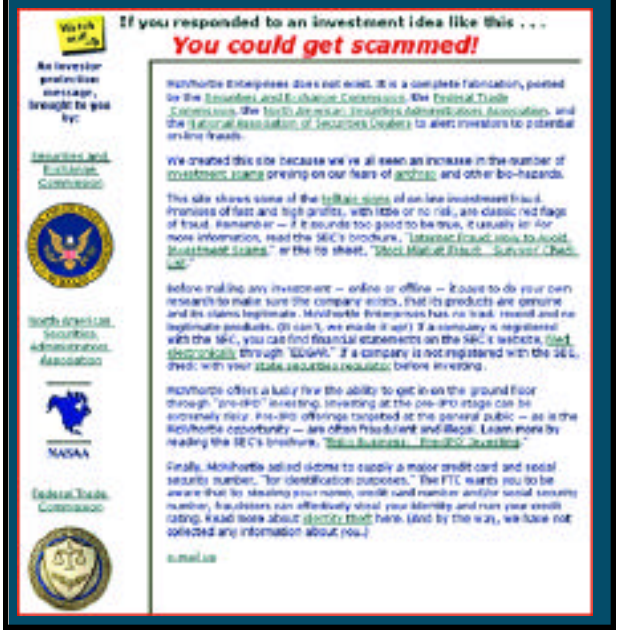
The page explains the importance of researching a company before investing in it, either through EDGAR (the SEC's database of publicly traded companies) or through state regulators.

The SEC enlisted the help of PR Newswire to distribute the phony press release, and the site received more than 150,000 hits in just three days.

"We're thrilled with the response," says SEC Chairman Harvey Pitt. "In a perfect world, everyone would read our educational brochures before they ran into a scam, but they don't. What we're trying to do is warn investors while their guard is down. The next time, when they encounter a real scam, these investors won't let excitement cloud their better judgment."

MCWHORTLE.COM

Traders who wanted to put money into McWhortle Enterprises — a fake company created by the SEC — instead received this warning.



Go (Mid)West, young man

Island says, "Goodbye Nasdaq, hello Cincinnati"

When an ECN makes a trade involving a Nasdaq stock, it has to pay the Nasdaq a reporting fee — even if the trade is executed internally in an ECN's order book. Considering ECNs account for one-third of the Nasdaq's total volume, that's a lot of money being generated for the Nasdaq.

Those trades also produce a large amount of market data (i.e. price and volume information), which the Nasdaq resells — to the tune of more than $250 million in 2000. However, while the Nasdaq has begun to refund part of that money to certain market participants (see "A Super rebate," *Active Trader*, January 2002, p. 19), the ECNs are not seeing a dime.

That obviously doesn't sit well with them, so in early February the Island ECN decided to do something about it. It began reporting most of its trades to the Cincinnati Stock Exchange, greatly reducing the fees it must pay the Nasdaq while at the same time creating a revenue base that will be used to provide rebates to subscribers.

The only trades that will continue to be reported to the Nasdaq are trades that involve the Nasdaq's SelectNet system, or trades of 100 shares or fewer. From the end user's standpoint, the entire process will be seamless.

Island believes its revenue distribution plan is far superior to the one created by the Nasdaq. Island says its research suggests that the Nasdaq will pay back approximately 20 percent of its revenue and, under the plan, there are certain market participants that do not get the full benefits of the rebate. Island will refund two-thirds of its revenue and will not discriminate among its subscribers.

Since the Cincinnati Stock Exchange has previously gained SEC approval to be an alternate reporting site for ECNs and market makers, there are no regulatory roadblocks to the plan.

Coming soon

SSFs: As trading nears, more news appears

Although it's still uncertain when single-stock futures (SSFs) will debut, at least two of the groups that will offer the instruments know what they will be trading.

While there are still tax and margin issues to be settled, OneChicago and Nasdaq LIFFE announced the initial list of stocks that will trade SSFs (see Tables 1 and 2, right). The American Stock Exchange had not released a list as of late February.

In other SSFs news, the Island ECN was approved to trade the contracts in late February. Its contract specs (one contract is worth 100 shares, the minimum tick is a penny; and the contracts will be physically delivered) are the same as the other three groups, and Island will use an electronic trading platform similar to its stock-trading platform.

Also, OneChicago announced that its contracts would not be fungible. While Island and the AMEX announced they were supporting fungibility, OneChicago's announcement means a contract bought on OneChicago will not necessarily be able to be sold on other exchanges, and vice versa.

Several other types of futures are not fungible, and the law that allowed SSFs mandates fungibility under certain circumstances — when volume in SSFs reaches 10 percent of total options volume, as long as that date is at least two years after the launch of SSFs.

Meanwhile, there is mixed reaction to SSFs from broker-dealers.

"We are going to have them," says Beth Stelluto, Schwab's senior vice president of active trader marketing. "It's important to provide the new investment opportunities to our clients. I don't know if they'll be a big deal."

Townsend Analytics will also offer its RealTick subscribers the ability to trade SSFs, although Townsend's technology currently supports SSF trading in Australia, where interest has been very minimal.

"About a year ago, we offered futures and got very poor reaction," says Jay McEntire, CEO of ProTrader. "So we'll wait and see on SSFs. I don't think there's a big benefit in being [the first broker to offer them]."

TABLE 1 ONECHICAGO'S SINGLE-STOCK FUTURES

American International Group	(AIG)
American Express	(AXP)
AOL Time Warner Inc.	(AOL)
Applied Materials	(AMAT)
AT&T Corporation	(T)
Bank One	(ONE)
Cisco Systems Inc.	(CSCO)
Citigroup Inc.	(C)
Dell Computer Corporation	(DELL)
eBay Inc.	(EBAY)
EMC Corporation	(EMC)
General Electric Company	(GE)
Goldman Sachs Group Inc.	(GS)
Intel Corporation	(INTC)
International Business Machines Corporation	(IBM)
Johnson & Johnson	(JNJ)
J.P. Morgan Chase & Co.	(JPM)
Merrill Lynch & Co. Inc.	(MER)
Microsoft Corporation	(MSFT)
Morgan Stanley Dean Witter & Co.	(MWD)
Motorola Inc.	(MOT)
Nokia Corporation ADR	(NOK)
Oracle Corporation	(ORCL)
Pfizer	(PFE)
Philip Morris	(MO)
QUALCOMM Inc.	(QCOM)
Sun Microsytems	(SUNW)
Siebel Systems Inc.	(SEBL)
Texas Instruments Inc.	(TXN)
VERITAS Software Corporation	(VRTS)

TABLE 2 NASDAQ LIFFE'S SINGLE-STOCK FUTURES

Advanced Micro Devices	(AMD)
American International Group	(AIG)
Amgen	(AMGN)
AOL Time Warner Inc.	(AOL)
Applied Materials	(AMAT)
AT&T Corporation	(T)
Bank of America	(BAC)
Bristol-Myers Squibb	(BMY)
Brocade Communications System	(BRCD)
Chevron Texaco	(CVX)
CIENA Corporation	(CIEN)
Cisco Systems Inc.	(CSCO)
Citigroup Inc.	(C)
Coca Cola	(KO)
Compaq	(CPQ)
Dell Computer Corporation	(DELL)
eBay Inc.	(EBAY)
EMC Corporation	(EMC)
Exxon Mobil	(XOM)
Ford Motors	(F)
General Electric Company	(GE)
General Motors	(GM)
Genzyme Corporation	(GENZ)
Home Depot	(HD)
Honeywell International	(HON)
Intel Corporation	(INTC)
International Business Machines Corporation	(IBM)
Johnson & Johnson	(JNJ)
J.P. Morgan Chase & Co.	(JPM)
Juniper Networks	(JNPR)
Merck	(MRK)
Merrill Lynch & Co. Inc.	(MER)
Micron Technology	(MU)
Microsoft Corporation	(MSFT)
Morgan Stanley Dean Witter & Co.	(MWD)
Nokia Corporation ADR	(NOK)
Oracle Corporation	(ORCL)
PepsiCo Inc.	(PEP)
Pfizer	(PFE)
Proctor and Gamble	(PG)
QUALCOMM Inc.	(QCOM)
SBC Communications	(SBC)
Sun Microsytems	(SUNW)
Siebel Systems Inc.	(SEBL)
Texas Instruments Inc.	(TXN)
VERITAS Software Corporation	(VRTS)
Verizon Communications	(VZ)
Wal-Mart Stores	(WMT)
Walt Disney Company	(DIS)
WorldCom Inc.	(WCOM)

A good start

Have data, will compare

The SEC's mandate that all market centers disclose their execution data was a good idea, although there was one problem. The data was released on a spreadsheet that, among the larger execution firms, consisted of thousands of rows. Making sense of one spreadsheet was difficult enough; trying to compare two or more was virtually impossible (see "Understanding execution data," *Active Trader*, February 2002, p. 14).

In early February, a new feature on the Web site of ECN Archipelago (www.archipelago.com) changed that. The program takes the data from 23 market centers and allows users to compare two or more of them in various categories. For a closer look at the functions of the Web site, see Web Watch, p. 24.

"I took a look at the original [data file] and wondered, 'How is anybody going to look at this and have a clue what it means?'" says Jenny Drake, the program's architect and a market strategist for Archipelago.

It took Archipelago more than six months to build the database that contains the ECN's monthly data. The Web site took a fraction of that time.

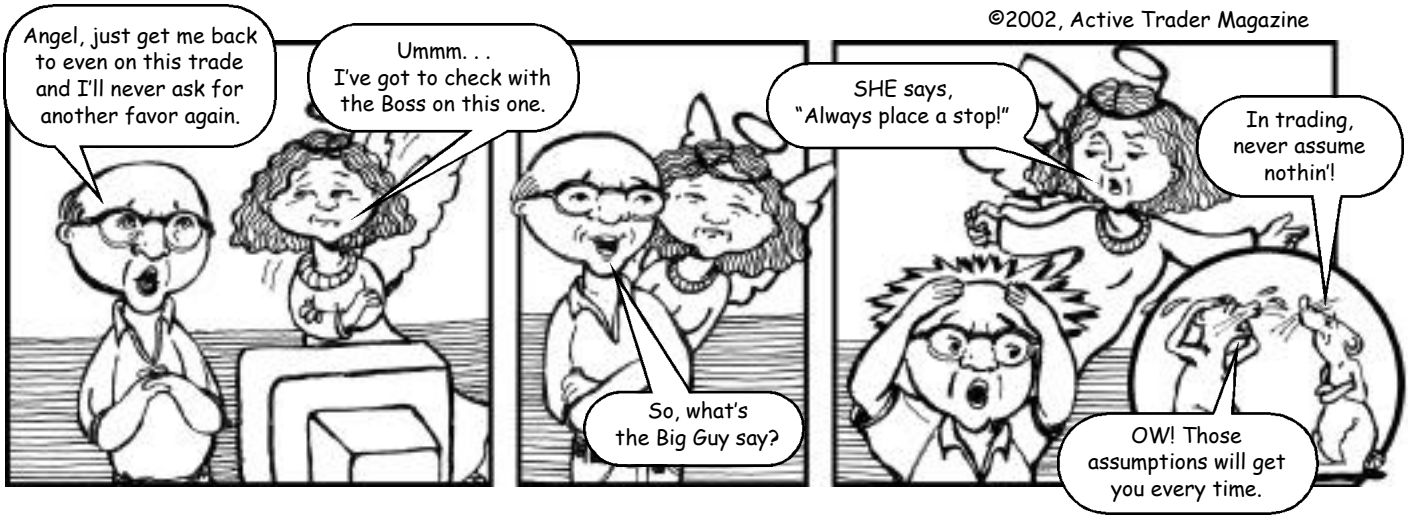
"Setting up the Web page and doing the analytics were relatively straightforward," Drake says. "We had some pretty good resources internally for doing analytics on data, and so building the actual reports on the Web was not all that difficult. It probably only took a few months."

When the program debuted in the first week of February, there were 18 market centers and the most up-to-date data was from October 2001. Less than two weeks later, there were 23 market centers and the December 2001 data was available.

"Originally, we had to manually go out and get the files," Drake says. "It's a pretty labor intensive program. We built programs to automatically pull down the [data] files. Once the files [are posted by the market centers], we'll give the firms a week to make sure the file out there is really the official file, and then we're going to pull everything and have it posted. Hopefully, within a week of the files being published, we'll have our page updated (there is typically a two-month lag for market centers to post their most recent data — i.e., the January data is not available until March).

"I think it's a great product, but we have some ideas and we're doing some

TRADING ROOM ANGEL



things that will make it even better. It's definitely an ongoing process."

While the 23 market centers on the Web site do not represent the entire market-making/execution community, they certainly comprise the group responsible for a large majority of the daily volume. Between three regional exchanges, the major ECNs and several large market-making firms (Knight, Merrill Lynch, Madoff, Herzog Heine Geduld), it's probable that any omissions would not have much of an impact on the overall statistics.

"Admittedly, we don't have everybody," Drake says. "We tried to get as many as seemed reasonable."

Drake says the program received favorable reviews from members of the press and Archipelago customers. It's also likely the SEC is glad to see a program of this nature.

"I think this is probably in line with what [the SEC] had envisioned evolving in the marketplace," Drake says. "The data is out there, the next step is get[ting] some tools that do the analytics and present[ing] the information in a way that is acceptable to the trading community."

While Archipelago is confident that the data will cast it in a favorable light in many instances, there is no question the data will also show that Archipelago is not the best choice for traders in certain situations.

"I'm going to quote our ad campaign — everything out in the open," Drake says. "We want to be as objective about the numbers as possible. We want people to start thinking about them. I think there have been a lot of myths, and by that I mean information that has not been backed up by actual quantitative measures — for instance, that you have to go to the primary market in order to get a best execution.

"If you look at the numbers, there's not one market center, be it a primary market or a regional market or a broker-dealer, that excels in all dimensions of best execution. No one market center is always the best, and the numbers support that."

Turn the page

NYSE OpenBook fails to excite traders

For many active traders, Nasdaq stocks are the only way to go. The Nasdaq Level II screens allow traders to see the total depth of a particular stock's order book — information that was not available on New York Stock Exchange stocks.

In late January, however, the NYSE launched NYSE OpenBook, a quote montage designed to be the Big Board's equivalent of Level II. The OpenBook shows all bids and offers for NYSE stocks.

However, the early response to OpenBook has been lukewarm, at best.

"The initial reactions are not overwhelmingly positive," says Stuart Townsend of Townsend Analytics. "It's designed differently from the Nasdaq book, so I don't know whether it's going to have a big demand or not. It's also quite expensive. We support it, but I don't know what our customers will think of it or if they're going to want it."

> "The initial reactions are not overwhelmingly positive. It's designed differently from the Nasdaq book, so I don't know whether it's going to have a big demand or not."
>
> —Stuart Townsend
> Townsend Analytics

As of late February — one month after its induction — very few broker/dealers were offering OpenBook to their customers, although many were considering it. Besides cost, there were two other main problems cited with OpenBook.

First, the data is not real time. It updates every 10 seconds, so the price shown at the top could be as much as nine seconds old. In a fast-moving stock, price could move several levels in that period of time.

Second, OpenBook data cannot be consolidated with other books, such as an ECN book or a regional exchange book. As a result, the price showing at the top is not necessarily the best price available.

In most cases, traders who place an order for a price listed at the top of a Level II screen will get that price. That isn't the case for OpenBook, and unless this changes, it's doubtful OpenBook will have much of an impact.

"We're still looking into it to see how much traders will be able to benefit from it vs. the cost that they would have to incur," says Trey Robinson, director of marketing for CyberTrader. "We do a low percent of our volume in NYSE stocks, so when doing cost vs. benefit, we have yet to find a good balance."

QUICK SCALPS

IP-UH, OH

▼ Credit Suisse First Boston was fined a record $100 million in late January for its role in an IPO scam. The NASD and the SEC found that CSFB charged customers an inflated commission in exchange for giving them shares in a "hot" IPO.

In many cases, these customers would buy a stock and pay exorbitant commissions to CSFB, then turn around and sell the stock at another brokerage, earning a huge tax loss when the commission was considered.

A NEW RECORD

▼ NASD Dispute Resolution had a record 7,088 claims filed in 2001, up 24 percent from the year before. In cases brought by investors, NASD arbitrators awarded damages totaling $97 million. However, more than 60 percent of all claims were resolved by the two parties before an arbitrator had to rule.

MORE MINIS

▼ The Chicago Mercantile Exchange (Merc) and the New York Mercantile Exchange (NYMEX) announced a joint agreement that will create and trade "E-mini" versions of certain energy futures. E-minis will be available on the NYMEX's crude oil, natural gas, heating oil and gasoline futures some time this summer. The contracts will trade on the Merc's GLOBEX electronic trading platform.

E-minis, which are about one-fifth the size of a standard contract, have been a huge success for the Merc in certain stock index futures.

THEY'RE FREE

▼ In late January, the NASD sold its remaining stake in Nasdaq — about 33.7 million shares — to the Nasdaq Stock Market. The Nasdaq Stock Market is now completely spun off from the NASD and moves a step closer to its intention of having an IPO.

THE PRICE IS RIGHT

▼ The Nasdaq announced two new pricing packages for market participants in early February. The first calls for an increase in the amount of tape revenue given back to participants. As of Feb. 11, 80 percent of what the Nasdaq receives for tape revenue will be rebated.

The second package makes a participant's fee and rebate schedule dependent on its activity. The more trades a firm reports through Nasdaq, the lower its fees will be and the more it will be rebated.

ON TRACK

▼ Track Data, a data provider and direct-access broker (through MyTrack) received approval from the NASD and the SEC to create a new Electronic Communication Network. The new ECN will be called the Track ECN, and, at press time, it was expected to begin operations in March.

AHOY!

▼ Stuart and MarrGwen Townsend, founders of Townsend Analytics, are avid participants in yachting. In February, the Townsends were able to combine their livelihood with their favorite hobby.

Terra Nova Trading, a division of Townsend, sponsored the Key West (Fla.) Race Week, an event in which the Townsends have long been participants.

"We actually replaced General Motors as the lead sponsor," Stuart Townsend says. "The demographics are right for a direct-access firm — young, affluent males. It was a really interesting marketing event that is totally outside this industry. Terra Nova has seen some rewards from it, and we also did well in the race."

The Townsend's yacht, Virago, finished ninth in the FAR40 (40-foot yachts) division.

IT'S SUPER

▼ MarketXT, the ECN owned by direct-access firm Tradescape, became the first ECN to be a full participant in Nasdaq's SuperSOES trading system. As a full participant, orders sent to MarketXT will be automatically executed. Full participation means MarketXT runs the risk of dual liability — being responsible for an order sent through SuperSOES while at the same time being responsible for an order matched internally.

Making sense of the execution data: Archipelago.com

Trade execution quality has been discussed *ad infinitum*, with various ECNs and market makers claiming to offer the "best." However, that claim has always been difficult, if not impossible, to verify. For starters, the meaning of best execution is different for each trader. While some want the fastest execution, others desire price improvement over anything else, and others want a combination of the two.

Furthermore, there previously has not been an easy way to compare data between two or more firms, even since the SEC mandated last year that such data be publicly disclosed. However, a new feature on the Web site of ECN Archipelago (www.archipelago.com) should answer many questions about execution, no matter how it is defined.

Archipelago has taken data submitted by various market centers and organized it in a way that allows users to compare the statistics in a variety of ways. The site is a gold mine of information, and one active traders should bookmark and check frequently.

To access the program, click on the "News and Views" tab from the Archipelago home page. Then click on "execution quality" and, after agreeing to the disclosure statement, you'll have access to the program.

There's some good information available in the two categories under the "Arca Specific Views" header, but the best part of the site is the five categories under the banner "Market Comparison Views." Here, you can choose up to 23 market centers — five ECNs, six exchanges and 12 market makers (although not every market center is included, the 23 that are comprise a large majority of the overall trading volume) — and compare them on a number of different criteria.

The most comprehensive search is the "11Ac1-5 Reports" (11Ac1-5 is the name of the SEC rule that mandates execution data be made available). Here, you can compare any or all of the market centers in up to 20 categories (e.g., internal executions, average realized spread, inside the quote spread, outside the quote spread, etc.). You can analyze the data for one of five order types (market orders and four types of limit orders) and one of four volume classes (100-499 shares, 500-1,999 shares, 2,000-4,999 shares, 5,000-10,000 shares).

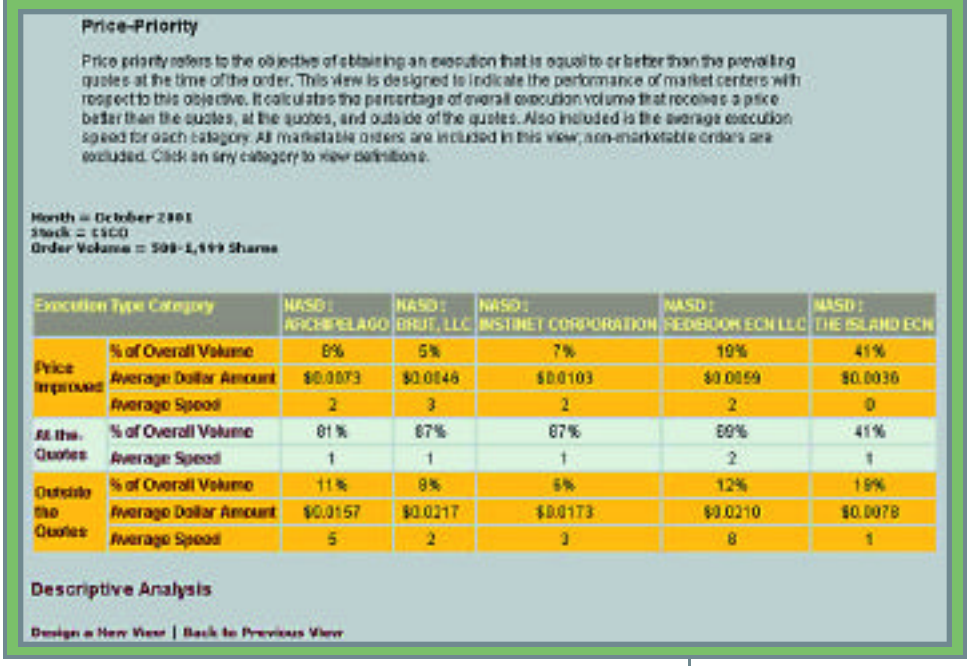
There are a few categories (average realized/effective spread, amount inside/outside the quote) that provide direct and helpful comparisons between market centers. For the most part, however, this section provides sheer volume numbers that are somewhat inconsequential on their own.

The real meat and potatoes of the sight, however, are the Execution Speed, Price-Priority and Price to Speed Relationship sections. All three allow you to choose a particular stock and one of the four volume categories listed above, and compare speed and/or price improvement data among market centers.

One drawback in the Execution Speed section is that the SEC rules mandated only that execution data be divided into five categories: Less than 10 seconds, between 10 and 29 seconds, between 30 and 59 seconds, between one and five minutes, and between five and 30 minutes (Figure 1, left). So, while it may

FIGURE 1: EXECUTION SPEED

Archipelago shows you what percentage of executions for a particular stock fall into what speed category.



Price-Priority

Price priority refers to the objective of obtaining an execution that is equal to or better than the prevailing quotes at the time of the order. This view is designed to indicate the performance of market centers with respect to this objective. It calculates the percentage of overall execution volume that receives a price better than the quotes, at the quotes, and outside of the quotes. Also included is the average execution speed for each category. All marketable orders are included in this view; non-marketable orders are excluded. Click on any category to view definitions.

Month = October 2001
Stock = CSCO
Order Volume = 500-1,999 Shares

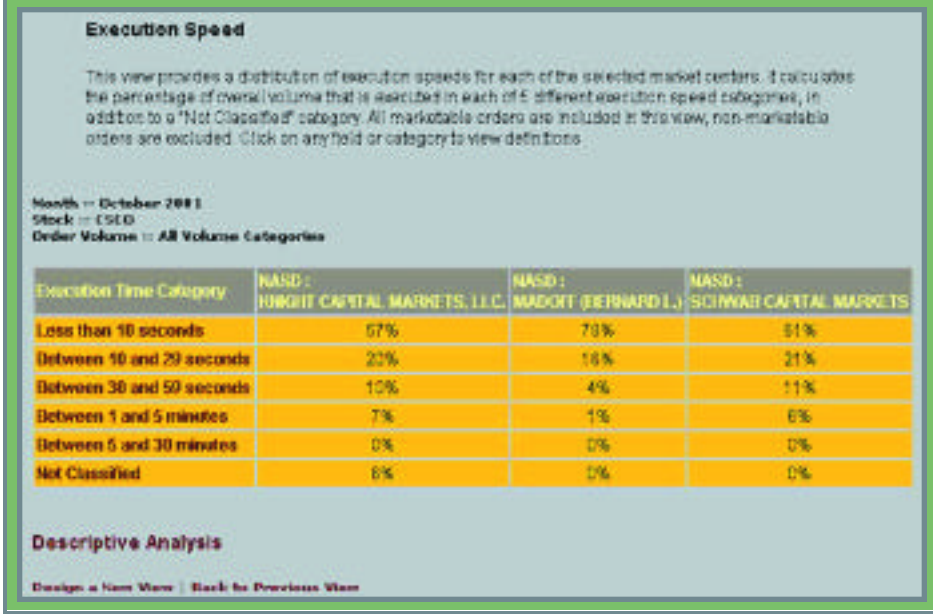
Execution Type Category		NASD: ARCHIPELAGO	NASD: BRUT, LLC	NASD: INSTINET CORPORATION	NASD: REDIBOOK ECN LLC	NASD: THE ISLAND ECN
Price Improved	% of Overall Volume	8%	5%	7%	10%	41%
	Average Dollar Amount	$0.0073	$0.0046	$0.0103	$0.0059	$0.0036
	Average Speed	2	3	2	2	0
At the Quotes	% of Overall Volume	81%	87%	87%	88%	41%
	Average Speed	1	1	1	2	1
Outside the Quotes	% of Overall Volume	11%	8%	6%	12%	18%
	Average Dollar Amount	$0.0157	$0.0217	$0.0173	$0.0210	$0.0078
	Average Speed	5	2	3	8	1

Descriptive Analysis

Design a New View | Back to Previous View

FIGURE 2: PRICE PRIORITY

The site allows you to compare the ability of different market centers to get price improvement on a particular stock.



Execution Speed

This view provides a distribution of execution speeds for each of the selected market centers. It calculates the percentage of overall volume that is executed in each of 6 different execution speed categories, in addition to a "Not Classified" category. All marketable orders are included in this view, non-marketable orders are excluded. Click on any field or category to view definitions.

Month = October 2001
Stock = CSCO
Order Volume = All Volume Categories

Execution Time Category	NASD: KNIGHT CAPITAL MARKETS, L.L.C.	NASD: MADOFF (BERNARD L.)	NASD: SCHWAB CAPITAL MARKETS
Less than 10 seconds	57%	78%	61%
Between 10 and 29 seconds	23%	16%	21%
Between 30 and 59 seconds	10%	4%	11%
Between 1 and 5 minutes	7%	1%	6%
Between 5 and 30 minutes	0%	0%	0%
Not Classified	6%	0%	0%

Descriptive Analysis

Design a New View | Back to Previous View

be helpful to learn that one market center is executing 99 percent of its orders in less than 10 seconds, there is no way to determine what percentage of those orders are being executed in eight or nine seconds, and what percentage are being executed in a split-second.

The information found in the Price-Priority section is more detailed. Here, you can see what percentage of a maker center's executions occurred at the quote, outside the quote or at an improved price, and the average execution speed for each. Also listed is the average amount of price improvement, or the average amount the trade was executed outside the quote (Figure 2).

The Price to Speed section more or less combines the data of the other two sections. It provides information on total share volume, volume executed in less than 10 and 30 seconds, and average spread. If you're a trader looking for the right balance of speed and price improvement, this may be the section to check out.

The site does a very good job of explaining the different categories of data and why what you're looking at is important. In most cases, a detailed description of a particular item is only a mouse-click away.

As of late February, the most recent data available was from December 2001. There is always lag time of several weeks between when market centers submit the data and when it is available for public consumption. It takes a bit longer still for Archipelago to assemble the data for its Web site, although the company says it's constantly working to speed things up.

It's important to note that the data presented on the Web site needs to be dissected within the larger market picture. Traders looking to find the best market center to route orders to will find the information on the Archipelago site helpful, but it's not enough on its own.

For more on the site, see "Have data, will compare".

NEW Products

▼ **FXtrek.com Inc**. recently launched IntelliChart Wizard, a charting package for foreign exchange traders. It features advanced technical indicators, and multiple indicators can be overlapped or moved to separate regions. Users can draw their own trend and Fibonacci lines and adjust the time scale and period. Time scale and periods are covered in minute, hour, daily, and weekly charts, with tick charts soon to be added. Both intraday and interday historical quotes are included. IntelliChart Wizard features real-time data, self-updating information, and the ability to save personal settings and launch multiple charts. It is available in Chinese, Japanese and Polish. The charting package is available for $40. For more information and to sign up for a free seven-day trial visit http://iwizard.fxtrek.com.

▼ **Wall Street Access** customers now have access to risk analysis tools by **RiskMetrics Group**, a financial analytics and technology firm, through WSA's online trading platform, Access Point. The tools, called Risk Analyzer, include: Portfolio Risk Analysis, which identifies concentration risks within a portfolio; 'What If' Analysis, which gauges the impact a trade will have on the portfolio prior to execution; and Optimization/Risk vs. Return, which allows customers to rebalance a portfolio in order to maximize returns for a certain level of risk, as well as calculate the amount of risk assumed to attain a certain level of return. In addition, Risk Alerts/Portfolio Alert provides customers with constant tracking and alerts when risk exceeds established level of risk tolerance; Event Risk determines a portfolio's behavior and maximum amount of loss given major market movements and volatile days; and Sector Analysis compares an individual portfolio's sector weightings in relation to major market indices. For more information visit www.wallstreetaccess.com.

▼ **Semotus Solutions** has introduced Equity Market Pro (EMPro), a real-time wireless product for institutional equity traders. EMPro provides real-time financial information and news, and features the ability to create and track watch lists for either push or pull delivery, snap quotes, charts and graphs, corporate profiles, symbol lookup, indices and world composite data. All data is customizable. In addition to market alerts, traders can request news stories by category, symbol, keyword or news code and set up news alerts using the same parameters. EMPro is powered on the Global Market Pro platform using Semotus' Over-the-Air-Programming (OTAP) technology. Market data is supplied by Reuters; news comes from the Dow Jones News Service; and yield curve graphs are supplied by GovPx. For more information visit www.equitymarketpro.com.

▼ **eSignal** now offers **MB Trading's** direct-access stock trading technology within its market data and analytic/charting applications. Orders are automatically routed to any exchange, market maker or ECN through MB Trading's MBTX Smart Route technology by clicking on a bid or ask within eSignal's Nasdaq Level II or Quote windows. eSignal users interested in trading with MB Trading need to set up an account with MB Trading. For more information visit www.esignal.com/map/mbt or call (800) 833-1228.

▼ **Global Forex Trading** has introduced MarketMentor, a tool providing market analysis and guidance. Available to DealBook FX subscribers, MarketMentor offers analysis from a professional fund manager as he or she trades. For more information visit www.gftforex.com.

▼ The **Options Industry Council (OIC)** now offers a class on covered calls as part of its online educational offerings. The Covered Calls course offers an in-depth introduction, including: benefits of the covered call strategy; details on how the covered call strategy works; and an explanation of speculative vs. defensive covered call writing. A quiz is included at the end of the course to help participants assess their knowledge and progress. It is accessible from the OIC Web site at no cost. For more information go to www.888options.com/seminar/online_classes_intro.jsp.

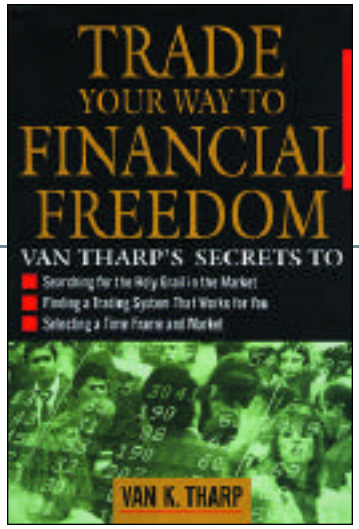
▼ Users of **Townsend Analytic's** RealTick Pro Plus and RealTick Order Entry now have access to Hottrend at no extra cost. Hottrend compares a stock's historical trading pattern to its existing behavior, and scans for news and other events that might indicate a change in public sentiment about a stock. Hottrend displays proprietary indicators on the 30 stocks it considers to have the best trading opportunities. Using this information can also provide an advanced warning of risk, and can help you discover when there is unusual insider activity or an information leak. For more information, visit www.realtick.com.

▼ **Datek Online Financial Services LLC** reduced its commission for online option trading to $9.99 plus $1.25 per contract (for each online order up to 200 contracts). The firm formerly charged $9.99 plus $1.75 per contract.

ESSENTIAL READING: *A fresh look at books published more than a year ago that should be a part of every trader's home library.*

Trade Your Way to Financial Freedom

By Van K. Tharp
McGraw-Hill, 1999
Hardcover, 300 pages
$29.95



REVIEWED BY THOMAS STRIDSMAN

How do you write a book on trading and system development without a detailed discussion of indicators, setups, and entry and exit rules?

You do what Van Tharp did in *Trade Your Way to Financial Freedom*: Discuss the concepts that are more important to a trading system than the actual entry and exit signals — specifically, money management, position sizing and mathematical expectancy. The book is an excellent read and an absolute must for traders who want to take their trading skills to the next level.

Position sizing is the most important part of any system, because if you have a good, positive expectancy system, then most of your profit or loss will come from position sizing…Your position size on a given trade must be low enough so that you can realize the long-term expectancy of your system over many trades.

— Chapter 4

Granted, without a trading system that buys low(er) and sells high(er), it's impossible to make a profit. However, if you already have a system that can do that, you're better off focusing on money management issues rather than trying to develop over-optimized entry and exit techniques.

That said, *Trade Your Way to Financial Freedom* contains a few trading systems and indicator analyses. However, the book's main purpose is to teach you how to increase profits with trading tools and techniques you are already using. In fact, you can easily skip the sections in which Tharp addresses various indicators and entry techniques (most notably Chapter 5, parts of Chapters 7 and 8 and the end of several other chapters) without missing any of the important ideas.

The book is structured to provide readers with enough knowledge to be able to understand the importance of the final two chapters, 12 and 13, which address position sizing and money management. According to Tharp, there are two position-sizing models that stand out from the crowd: the percent-risk model and the percent-volatility model.

Of the two, the percent-risk model is better suited to long-term trend followers, while the percent-volatility model is more appropriate for short-term swing traders. Both models always trade a constant percentage of available capital in each trade. The difference between them is that the amount traded in the percent-risk model is calculated as a function of the distance between entry point and the stop-loss level, while the amount traded in the percent-volatility model is based on the current market volatility.

If there is a negative to this book, it is how the author uses the term "risk." Sometimes he refers to it as the amount lost in one or all trades, and sometimes as the maximum drawdown — neither of which is correct. "Risk" is the total distance between the entry point(s) and the stop-loss level(s). For example, if you're in two trades, and both have stop-losses two points away from entry, the total risk is four points — regardless of how the trades turn out. Although this mistake (which, by the way, the author isn't alone in making) is scattered throughout the book, it does not detract from the overall message.

Trade Your Way to Financial Freedom is an excellent book. It should give every trader a better understanding of what makes a profitable trading strategy even more profitable.

An Active Trader Web Extra with additional information about money management will be available at www.activetradermag.com/special/moneymanagement.htm from April 8 through April 30.

Software SCREENING: NewsWatch

REVIEWED BY ACTIVE TRADER STAFF

SOFTWARE SUMMARY

Program: NewsWatch
Company: NewsWare, a division of Track Data Corp.
Price: $100/month minimum, more depending on specific services selected. Two-week free trial available
Web site: www.newsware.com
E-mail: newsware@trackdata.com
Phone: (212) 943-4555
Address: 56 Pine Street, New York, NY 10005
Minimum system requirements: PC running Windows 95, Windows 98, Windows 2000,Windows XP or Windows NT 4.0; 200Mhz or faster processor, 32MB RAM.

Virtually every trading platform comes with some kind of newswire service (or the ability to integrate one), and most typically offer a choice between a handful of similar news services. Sometimes you can get what you want, other times you have to take what you're given.

For many traders, that's enough. But for those who are serious about their news, that's just scratching the surface. News junkies who want to survey, search and sort a wide range of market news and data from one program can get their fix from NewsWatch.

Features

NewsWatch gives traders (depending on how much they want to spend — pricing is flexible) access to more than 100 market news and analysis services and the ability to perform sophisticated searches based on a wide range of criteria. You can also set alerts based on your search criteria, as well as get quotes and monitor portfolios.

News and analysis. NewsWatch is not limited to traditional newswire services like Reuters and Dow Jones. It also features technical analysis and market alerts from sources like RealTimeTraders, TradersWire, and Midnight Trader, as well as unique features such as the MarketMap, which keeps tabs on the stocks different market makers are trading; "calendars," which updates economic numbers; and analyst recommendations. One benefit of the wide range of sources is that it allows traders to compare coverage, which can aid in confirming or discounting information (e.g., rumors).

Search features. Searches can be performed on an impressively wide range of criteria, including tickers, vendor news codes, industry groups, keywords and combinations of words that can be additionally customized by applying Boolean logic expressions ("or," "and not"). Searches comb both headlines and the full text of articles.

In addition to the current day's data, you can search several months of past data, including specific ranges of data (e.g., April 1 to April 5).

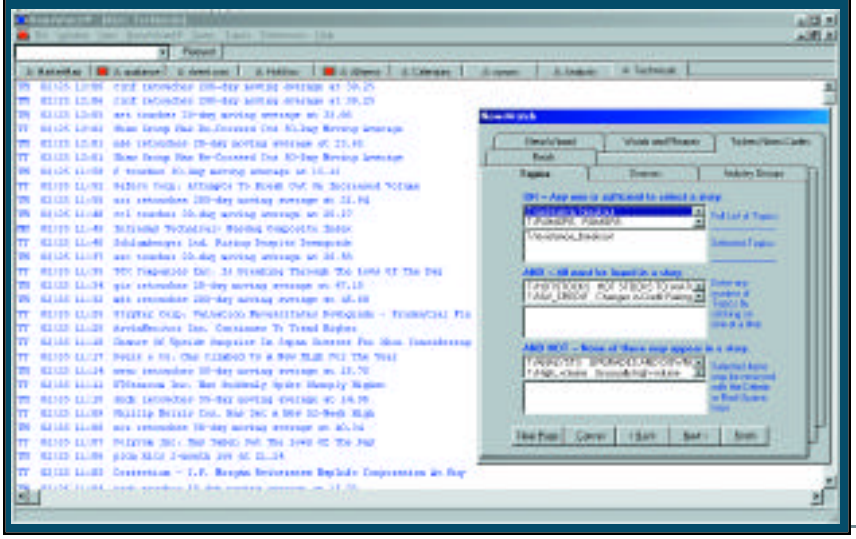
You can do a quick "Request" in the text box at the top of the page or design and save sophisticated search criteria as "Topics," which can be accessed and re-used at any time. The NewsWizard is a helpful series of dialogue boxes that walk you through the process, allowing you to enter your search parameters window by window (see Figure 1). NewsWatch also comes with built-in Topics you can experiment with.

Double-click on a headline and you get your story. A nice feature is the ability to highlight text in a story with your mouse and quickly do a new query on the material you selected.

Alerts. You can set alerts based on any of the search criteria you create. We put together a simple alert for stocks trading on high volume by creating a Topic that combined "volume" and "twice" and "daily." A click of the mouse and we immediately had a new window with 13 stories. Your search criteria is highlighted in the stories, so you can quickly reference which items are most relevant. This was a basic search; you can get as detailed and focused as you wish.

FIGURE 1 NEWSWATCH

In addition to standard news services, NewsWatch also includes technical news and alerts. The NewsWizard (inset, right) provides a template for building and editing customized search topics.



Other features

NewsWatch also includes quotes and portfolios. The portfolio and quick quote functions give you access to data from any domestic stock, options or futures exchanges, as well as some Canadian and European exchanges.

The Database function provides fundamental data from CDA Spectrum, First Call Earnings, Market Guide, S&P Market Scope, SEC Online (Edgar), Vickers 144, and Zacks.

Bottom line

NewsWatch is for traders who want a lot of news, want it from different sources, and want it now. It's not cheap, but for those who need the kind of information the program integrates, it offers one-stop shopping, and search-and-sort functions that go far beyond the typical headline search capabilities of many news packages.

TODAY'S MARKET:
Level playing field or slippery slope?

Two insiders offer their perspectives on changes instituted by the Nasdaq and the SEC over the last year.

SuperSOES has resulted in faster executions and increased price transparency for individual traders

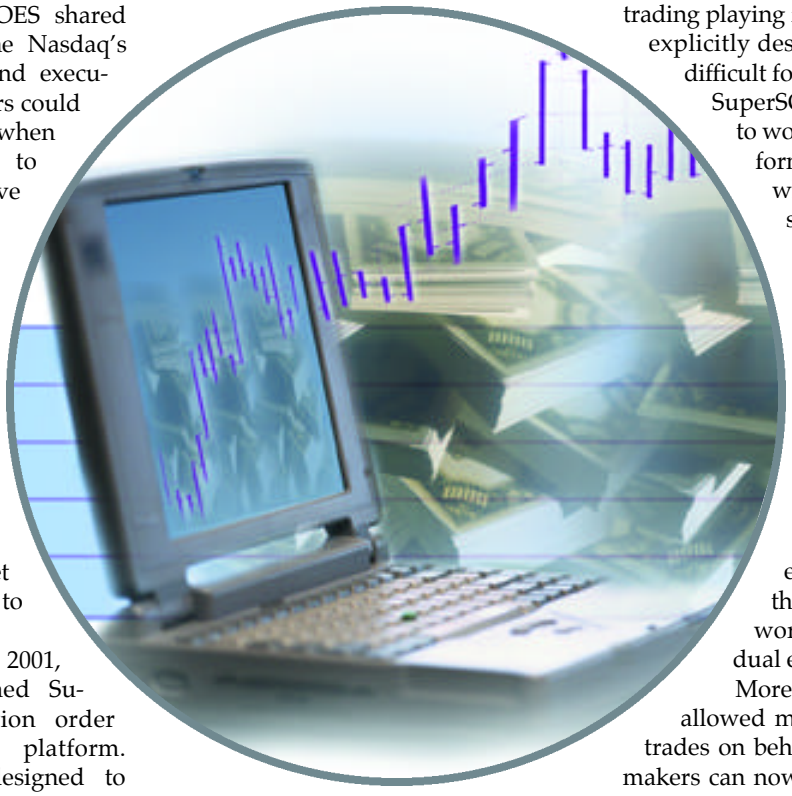
BY ROBERT SALES

Less than a year ago, when SelectNet and SOES shared top billing as the Nasdaq's order delivery and execution networks, market makers could afford to roll their eyes when asked about the challenge to market share posed by active individual investors.

After all, when retail orders were routed to them through either of the Nasdaq's execution networks, market makers were in complete control. They could hold an order and wait to see what developed, or fill only a small part of an order, thanks in large part to outdated rules that gave market makers significant leeway to execute retail trades.

That all changed in July 2001, when the Nasdaq launched SuperSOES, its next-generation order routing and execution platform. SuperSOES, which was designed to replace SOES and SelectNet as the sole order execution network for all market-maker-addressed orders, significantly changed the dynamics of the market maker/retail trader relationship.

Through SuperSOES, retail investors were empowered, for the first time, to tap into market makers' reserve order books. Moreover, unlike SOES and SelectNet — systems that gave market makers time to play with retail orders — SuperSOES is an automatic execution system that requires market makers to execute immediate fills when they receive orders that match their publicly displayed price.



However, while the Nasdaq built the platform with an eye on leveling the stock trading playing field, SuperSOES was not explicitly designed to make life more difficult for market makers. Prior to SuperSOES, market makers had to worry about potentially performing dual executions when they received orders simultaneously from both SOES and SelectNet.

But when it released SuperSOES, the Nasdaq transformed SelectNet into a non-liability system. Basically, that meant market makers that received orders through SelectNet were no longer obligated to execute them — and therefore no longer had to worry about performing dual executions.

Moreover, whereas SOES only allowed market makers to execute trades on behalf of customers, market makers can now use SuperSOES to execute trades for their own accounts. This rule change, which gives market makers the ability to trade with each other via Nasdaq's execution pipeline, was enact-

ed to foster greater competition and improve price transparency for all of the 3,500 stocks traded in SuperSOES.

For those stocks, SuperSOES *has* led to greater price transparency, and investors trading those issues have benefited from faster executions and a higher fill rate, according to Karen Peterson, a director in the Nasdaq's transaction services division.

> SuperSOES is an automatic execution system that requires market makers to execute immediate fills when they receive orders that match their publicly displayed price.

"SuperSOES has radically decreased the time it takes to get an order executed via a Nasdaq network," she says. "We've seen that average time to fill an order going from five seconds in SOES to less than one second in SuperSOES."

Peterson also says that following the launch of SuperSOES, market makers began posting larger size orders on the Level II quote montage. In the past, market makers often posted size in 100-share lots, partly because of their dual liability concerns and partly because posting such a small size gave them more freedom to manipulate orders.

But Peterson says because SuperSOES gives market makers the ability to trade on behalf of their own accounts and eliminates the dual liability factor, they have been enticed to post bigger size. She declines, however, to cite specific price transparency figures for the pre- and post-SuperSOES environments.

If there's one drawback in SuperSOES, it occurs when an order is blocked by an Electronic Communications Network (ECN). When this occurs, execution times suffer significantly.

ECNs (with the exception of MarketXT) are not auto-execution participants (doing so would create dual liability issues for them), so an order sent to a market maker via SuperSOES will just sit there if an ECN is on the best bid/offer. The market maker's order will be executed only after the ECN gets an internal fill (or fills an order sent from SelectNet) and moves away from the top of the order book.

SuperSOES eats SelectNet?

Besides providing a more efficient and faster trading network for Nasdaq participants, SuperSOES was built with the intention of eventually cannibalizing most — if not all — of SelectNet's volume. Prior to last July, SelectNet was the main Nasdaq-supplied execution network that market makers, day traders and institutions were using to buy and sell Nasdaq stocks.

In fact, prior to SuperSOES, SelectNet's main rival for Nasdaq transaction volume was not SOES but ECNs. According to a recent report published by JPMorgan H&Q, a San Francisco-based research and consulting firm, SelectNet accounted for 26.7 percent of the Nasdaq's share volume in June 2001. SOES, in contrast, accounted for just 1.6 percent that same month. Fast-forwarding to September 2001, SuperSOES accounted for 18.5 percent of the Nasdaq's volume, while SelectNet was responsible for only 10.7 percent.

Why the dramatic shift in usage? First, SelectNet became a non-liability system. But perhaps more significantly, SuperSOES is a much more attractive option than SelectNet for active traders.

In the past, when an active retail trader routed an order to a market maker via SelectNet, he or she could not cancel that order for 10 seconds — an eternity in fast market conditions. That 10-second window gave market makers ample time to maneuver, often at the expense of retail traders on the opposite sides of trades.

SuperSOES, by contrast, is an automatic execution system that calls for market makers to immediately fill orders that match their posted price.

According to JPMorgan H&Q senior research analyst Greg Smith, SelectNet's time interval allowed market makers to "bog down" the market with stale quotes that did not reflect the real best bid and offer for a stock. Those stale quotes, he says, not only limited SelectNet's volume but helped fuel the growth of ECNs. Rather than taking a chance on SelectNet, most active traders have historically used their direct-access software to route orders directly to ECNs.

Citing the JPMorgan H&Q equity market share report, Smith says ECNs accounted for roughly 47 percent of Nasdaq's share volume in third quarter 2001 — despite the fact that SuperSOES was fully operational by the end of July. ECN volume has been steadily climbing for the better part of three years, and it appears that SuperSOES has not slowed that growth.

However, while asserting that SuperSOES has yet to lure any significant volume away from ECNs, Smith says that the system, at the very least, has supplied direct-access traders with a faster execution alternative.

"Speed is everything for that group, and SuperSOES is faster than SelectNet," he says.

Benjamin Weinger, founder of direct-access vendor Blackwood Trading, says the advantages that SuperSOES provides run even deeper than price transparency and speed. SuperSOES, he says, has placed direct-access traders on a more level playing field with market makers by providing access to market makers' reserve books.

Before SuperSOES, Weinger says, direct-access traders could route orders to the entire market-maker community by placing an order in SOES. But since market makers were only required to publicly display a minimum of 100 shares for each stock they traded through SOES, active individuals who routed orders to market makers via the network could usually only get fills for very small orders.

"Pre-SuperSOES, what would often happen is a market maker would maybe show 100 shares, but they really had 5,000 shares they were looking to buy and sell — shares they kept in their reserve book," Weinger says. "Under SOES, you could not route an order into their reserve order books. You could only get a fill for [the size] a market maker

was publicly displaying."

Unlike SOES, SelectNet previously provided direct-access traders with a mechanism for routing larger orders to a specific market maker. However, Weinger says SelectNet's so-called "preference" mechanism was not really a viable option for active traders, because the 10-second time interval limited the ability to get the best price from market makers.

Prior to SuperSOES, if a retail trader wanted to send a 1,000-share order to Goldman Sachs through SelectNet, the Goldman market maker had 10 seconds to decide what to do with that order. SuperSOES does not permit such tinkering with orders.

"SuperSOES takes away the advantages market makers had when they responded to orders that were sent to them through the SelectNet system," he says. "Now, if a market maker is there for 1,000 shares and he is sent a SuperSOES order for that size at the price he's displaying, he has to fill it automatically."

However, Nasdaq's Peterson says that it is not fair to paint a negative picture of the impact of SuperSOES on market makers. SuperSOES, she says, has empowered market markets to execute orders more expeditiously, with higher fill rates, on behalf of both customer and proprietary accounts. Moreover, she says, the system has replaced SelectNet as the main vehicle for market makers to trade with each other.

Besides providing a more efficient and faster trading network for Nasdaq participants, SuperSOES was built with the intention of eventually cannibalizing most — if not all — of SelectNet's volume.

JPMorgan H&Q's Smith says that SuperSOES has definitely eliminated some of the information benefits market makers previously leveraged through SelectNet, but also believes that group has benefited from the trading perks SuperSOES offers.

"The interesting thing is it gives them a more efficient way to do their proprietary trading, relative to SelectNet," he says. "So for market makers, it's both a positive and a negative."

Blackwood's Weinger claims the bottom line is that market makers now have less control over order flow and are therefore having more difficulty making money. That said, Weinger and Smith agree that the network has been a big-time plus for active individual investors.

"Any way you slice and dice it, SuperSOES is an upgrade for your average day trader," Smith says. "You'll see day traders actually hitting market makers more often, because of the efficiencies of SuperSOES relative to SelectNet."

For more information on the author see p. 3.

The predecessors: SOES and SelectNet

Prior to the launch of SuperSOES, Nasdaq participants had two order delivery and execution options: SOES (the Small Order Execution System) and SelectNet.

SOES, which had a maximum order size of 1,000 shares and made its debut in 1984, was built to provide small retail investors with a tool to access the best prices available on the Nasdaq. SelectNet, which was introduced in 1990, targeted Nasdaq traders who needed a mechanism for executing larger-size orders with market makers.

Though they served their purposes, both systems were governed by arcane, market-maker-friendly rules that made it difficult for retail investors to get timely executions at a fair price. Under SOES, for example, market makers had a 17-second window to execute against consecutive, same-priced orders. This window gave market makers time to play with orders routed to them through SOES.

Since they were responsible for orders received through both systems, market makers sometimes faced dual liability — i.e., they were obliged to execute two orders even though they posted only one offer.

Consequently, market makers often publicly posted a size of only 100 shares — the minimum size they were required to display for each stock they traded. Displaying such small size helped market makers protect themselves and provided them with leverage in their efforts to hide their true intentions from individual investors.

Similar to SOES, SelectNet was driven by regulations that made it difficult for individual traders and investors to get a fair shake. For example, any order that was entered into SelectNet could not be cancelled for at least 10 seconds. Essentially, that rule gave market makers a 10-second window to decide what to do with an order routed to them through the network. And, of course, in a volatile market, the price of a stock could shift dramatically in 10 seconds.

Unlike SOES, SelectNet remained intact following the launch of SuperSOES. However, it was transformed into a non-liability order delivery and negotiation system. In simpler terms, this meant that, post-SuperSOES, any market maker that received an order through SelectNet was no longer required to execute that order.

In terms of interacting with market makers, SelectNet is now essentially a network for communicating indications of interest — a medium through which market participants communicate their desire to buy or sell a stock at different price and size levels.

SelectNet also continues to act as the sole order-routing link between the Nasdaq and ECNs. Through direct access software, most active traders route orders directly to the ECN of their choice. Just as it did in the pre-SuperSOES era, SelectNet provides an indirect, Nasdaq-driven alternative for accessing ECNs.

Nasdaq fee structure and decimalization is putting the squeeze on retail traders.

BY DAVID A. BAKER

There is no denying that good "spin" is key to shaping opinion. Certainly, the Nasdaq, New York Stock Exchange and Securities and Exchange Commission are aware of this, based on the way they explained the recent changes made in the financial markets. While they only see the positive side to the changes, many traders have, in fact, been significantly hurt by them.

The old days

In September 2001, it was announced that there would be a new fee structure for Nasdaq market participants, which was eventually phased in over a four-month period.

Under the previous pricing scheme, market makers were billed based on the number of orders they placed and paid a fee each time they cancelled an order. For retail traders who use online brokers such as Fidelity and Charles Schwab, these fees were figured into the flat-rate commissions they pay. In this case, a customer's order is represented on the Nasdaq quote montage (display) through a market maker.

Most professional traders, however, use direct-access brokers to enter their orders. Direct-access brokers route orders through various Electronic Communications Networks (ECNs), as well as the Nasdaq's own order-execution systems.

Each ECN may charge a fee for removing liquidity from its network, or provide a rebate for adding liquidity. For example, if a direct-access trader saw 500 shares of stock for sale in the Island (ISLD) order book and bought those shares, he or she may be charged a small fee for removing the liquidity. On the other hand, if the same trader offered his stock for sale on the same ECN, he may be paid a fee for adding liquidity.

When direct-access traders trade directly with market makers, they primarily use the Nasdaq's Small Order Execution System (SuperSOES). The SuperSOES sends an order to the market maker to execute against his or her supply of stock. Remember, because retail traders are not licensed market makers, they can only use SuperSOES to remove liquidity by buying stock from or selling stock to a market maker who is posting a quote.

What's new?

The Nasdaq's new pricing system has provided advantages only to market makers, and has cost professional retail traders more to execute their orders. The first addition was a 10-cent order execution charge levied on both market makers and retail traders. The 25-cent order-cancellation charge previously in place remains.

There is also a new per-share execution charge. The fee is $2, and in some cases $3, per 1,000 shares. When these additional charges were announced, so were several rebate plans designed for market participants that provided more liquidity — i.e., market makers. The Nasdaq stated in its "Head Trader Alert #2001-153," dated Sept. 28, 2001, that the new pricing structure would "provide fairer treatment to all participants." It also said, "The result of that will be a more balanced, equal cost structure for all participants providing liquidity to the market."

However, retail traders using direct-access systems are only able to remove liquidity from the Nasdaq system. They cannot add liquidity to the SuperSOES system — that is, enter orders into the quote display through the market maker system. The fairness to which the Nasdaq refers is that those participants who provide more liquidity will be rewarded with rebates.

Now, while $2 per 1,000 shares may not sound like a lot, keep in mind that many full-time traders buy and sell more than 1 million shares per day. For these traders, it could cost an additional $500 per day to trade. This is on top of the commissions paid to the brokerage firm.

Would it be fair to say that a trader who executes more than 1 million shares per day provides liquidity? Certainly. The biggest concern of traders — whether they are retail traders, full-time

day traders or market makers — is lack of liquidity. Without different kinds of investors and traders — including short-term traders — exchanging millions of shares each day, the market would die.

With this in mind, it would be quite negative for a retail trader who moved more than 1 million shares per day to leave the market. Remember, a trader who trades this level of volume is often only trading for pennies at a time, so each $2 matters.

Rarely will anyone who trades for a living utter a positive comment about penny spreads.

Unfortunately, the Nasdaq does not reward these individuals for providing liquidity to the market. Direct-access traders are often the highest volume retail customers in the market, yet they will suffer significantly from these rule changes.

Pennied to death

The most significant change in the market in the past few years was the introduction of decimalization, which caused many stocks to trade with penny spreads. When stocks traded in fractions, the minimum spread between the best bid and best offer on any stock priced more than $10 was 1/16 of a dollar, or about 6 cents.

The switch to decimalization has created a huge problem for intraday traders. Professional traders, whether market makers or full-time retail traders, profit primarily from a stock's ability to move a reasonable amount in a short time period. In other words, they profit from volatility.

Previously, stocks only needed to move through 16 price levels to move one dollar. Now they must move through 100 price levels to move the same amount. This has dampened volatility. When stocks move this slowly, it becomes harder for intraday traders to trade them.

For example, when looking at the Level II screen of a large-cap stock such as Microsoft (MSFT), you can see there is a significant amount of stock bid and offered at each price level — just as there was prior to decimalization. However, a stock that trades through 16 levels has moved only 16 cents, not a dollar as was the case before.

When stocks are idling, it's very hard for anyone to make money. Traders cannot realize gains on a daily basis because there is nothing to trade. Professionals are not concerned whether or not a stock moves up or down, but rather simply that it is continuously moving. The market sell-off that began in 2000 had reduced market volatility significantly; the introduction of the penny spread quashed it further.

The SEC said penny spreads would benefit traders because they would only have to pay up one cent to purchase something at the market price, instead of 1/16 of a point (assuming the stock was quoted at the minimum spread). In other words, to purchase 1,000 shares of a stock at the market price, a trader would only have to pay $10 over the bid instead of $62.50.

However, traders have the right to place limit orders to ensure they pay only the price they want to. The groups that favored decimalization assumed all people trade at the market price. Savvy investors, though, wait for specific entry and exit areas.

For those who trade listed securities, a specialist can now step in front (i.e., improve the bid or offer to gain trading priority) of a retail customer's order by only one penny. While the specialist has always been able to step in front of the order, it is much cheaper for him to do that now, and his risk is down significantly.

Rarely will anyone who trades for a living utter a positive comment about penny spreads. The reasons for this are quite clear.

Minimum spread, maximum problems

The biggest concern for intraday traders remains penny spreads. Why the SEC would decide to make significant changes in the financial markets during a bear market is difficult to explain. Furthermore, rather than testing the waters by reducing spreads from 6.25 cents to 5 cents, they jumped to the extreme.

Market makers have been hurt as much as other professional traders — just look at the recent profit statements from Knight Trading (NITE) or other leading market makers. Considering these two groups are responsible for a sizable amount of volume in the market, one has to wonder who has benefited from these changes.

For more information on the author see p. 3.

The POWERTOOL strategy

Like any other craft, trading requires the right tool(s) for the job. In this case, combining a simple trend indicator with a bull/bear momentum calculation creates an excellent timing tool for short-term traders.

BY THOMAS A. BIEROVIC

Many winning trading strategies rely on two technical indicators — one to determine a market's underlying trend and another to time a trade. The Powertool strategy is a good example: It uses Joseph Stowell's three-bar net line as the trend indicator and Dr. Alexander Elder's bull power/bear power as the timing indicator.

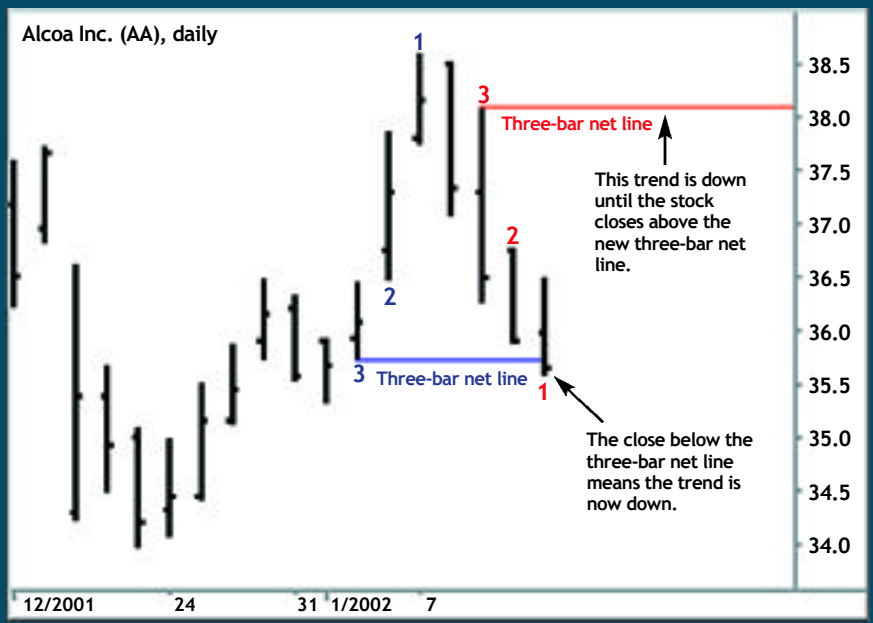
Together, the two indicators create synergy — i.e., a whole greater than the sum of its parts: Trading with the three-bar net line is more precise when trades are timed with bull power/bear power; and trading with bull power/bear power is more consistent when trades are taken in the direction of the three-bar net line.

Stowell's three-bar net line

To draw a three-bar net line (see Figures 1, left, and 2, opposite page) when price has been rising recently, first find the highest high for the current upswing and label it bar 1. Next, look to the left and find the most recent low that is lower than the low of bar 1 and label it bar 2. Finally, look left again and find the most recent low that is lower than the

FIGURE 1 DEFINING THE TREND: THE THREE-BAR NET LINE

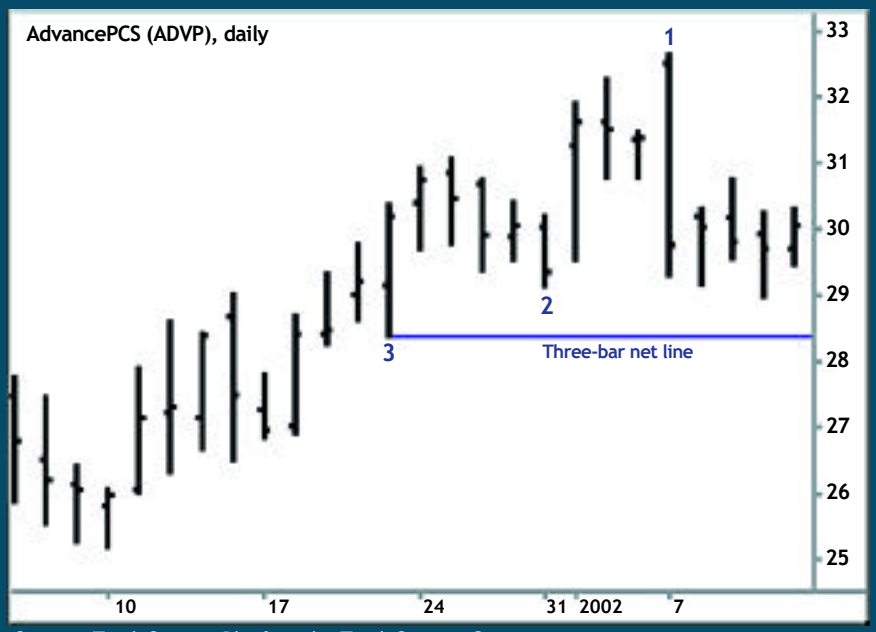
The bar labeled with a blue 1 is the highest high of that upswing. The bar to its left, labeled bar 2, has a lower low than bar 1. The bar to the left of bar 2, labeled bar 3, has a lower low than bar 2. The horizontal line extending from the right of bar 3's low is the three-bar net line. The last bar on the chart (labeled with a red 1) closes below the three-bar net line, so the new trend is down. The bar to its left has a higher high than the last bar, so it's labeled bar 2. The bar to the left of bar 2 has a higher high than bar 2, so it's labeled bar 3. The new three-bar net line extends to the right of bar 3's high. The trend is down until price closes above the most recent three-bar net line.



Source: TradeStation Platform by TradeStation Group

FIGURE 2 THREE-BAR NET LINE IN AN UPTREND

Bar 1 is the highest high of the current upswing. Bar 2 is the first bar left of bar 1 with a lower low than bar 1. Bar 3 is the first bar to bar 2's left with a lower low than bar 2. The three-bar net line is drawn to the right of bar 3's low. The trend is up until price closes below this three-bar net line.



Source: TradeStation Platform by TradeStation Group

Calculating an EMA

An exponential moving average (EMA) uses a "smoothing factor" to give more emphasis to recent prices, thus making the indicator more responsive to directional changes as they occur. The shorter the EMA, the more the most recent price action is emphasized. The opposite is true for longer EMAs.

Expressed in terms of daily bars, the EMA formula is:

Today's EMA = (C*(P - EMA_{-1})) + EMA_{-1}
where
P = current price (typically, the closing price)
EMA_{-1} = previous period's EMA
C = smoothing constant

Because you need to know the previous day's EMA value to calculate today's EMA, it is necessary to begin the EMA calculation using a simple moving average (SMA) value. The following formula relates the smoothing constant used in an EMA to the number of bars in an equivalent SMA:

Smoothing constant (SC) = 2/(1+N)
where
N = number of periods in SMA

For example, the smoothing constant to produce a "20-day" EMA is .095 (2/{1+20}).

low of bar 2 and label it bar 3. The three-bar net line is a horizontal line extending right from bar 3's low. The trend is up until price closes below the current three-bar net line.

The process is inverted for drawing a three-bar net line when prices have been falling (see Figures 1 and 3). Bar 1 is the lowest low of the downswing. Look to the left: The most recent high that is higher than the high of bar 1 is bar 2. Look left again: The most recent high that is higher than the high of bar two is bar 3. Now, draw the three-bar net line to the right across the chart from the high of bar 3. The trend is down until price closes above the current three-bar net line.

One note: Inside bars (those with lower highs and higher lows than the bars preceding them) don't count, so just skip over them.

Bull power/bear power indicators

Dr. Elder's bull power measures the bulls' ability to pull price higher; his bear power measures the bears' ability to push price lower.

Bull power is the current price bar's high minus a 13-bar exponential moving average (EMA) of closing prices. Bear power is the current price bar's low minus the 13-bar EMA (see "Calculating an EMA," right, for more information on exponential moving averages).

The logic behind bull power/bear power is that the price high represents the maximum power of bulls, the price low represents the maximum power of bears, and the EMA represents, in Dr. Elder's words, the "average consensus of value." The distance between the high and the EMA defines bull power, while the distance between the low and the EMAdefines bear power (see Figure 4).

Bull power and bear power are plotted as separate histograms below a bar chart (see Figure 5).

Interpreting bull power/bear power

In a neutral (sideways) market, bull power is usually above zero (i.e., the high is above the EMA), and bear power is usually below zero (i.e., the low is below the EMA.) In an uptrend, however, both bull and bear power are frequently above zero (the high and low are both above the EMA). In a downtrend, both bull and bear power are frequently below zero (the high and low are both below the EMA). Figure 5 illustrates this.

You probably won't want to buy a market when price has already climbed so steeply that the low is above the EMA, or sell it short when it has already declined so sharply that the high is below the EMA.

Instead, when price is in an uptrend, wait for bear power to cross below zero (e.g., for the low to fall below the EMA) to avoid buying when the market is overbought. Then wait for bear power to tick up (to be greater than it was yesterday), which indicates the countertrend decline has lost its downward momentum. With that setup in effect, place an order to buy above the previous price bar's high.

Similarly, in a downtrend, wait for bull power to cross above zero (e.g., for the high to rise above the EMA) so you won't be selling short when the market is oversold. Then wait for bull power to tick down (to be less than it was yesterday), suggesting the countertrend rally has run its course. With the setup in effect, place an order to sell short below the previous price bar's low.

The Powertool rules are:

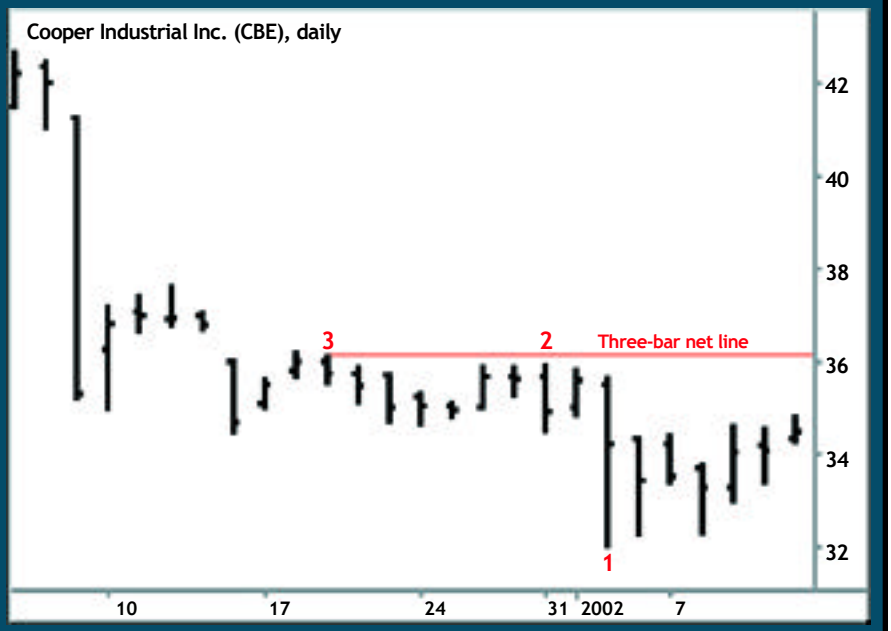
Long
Setup:

1. The close is above the three-bar net line.
2. Bull power is above 0.
3. Bear power crosses from above 0 to below 0.
4. Bear power is greater than it was yesterday.

Entry: Buy tomorrow above today's high.

FIGURE 3 THREE-BAR NET LINE IN A DOWNTREND

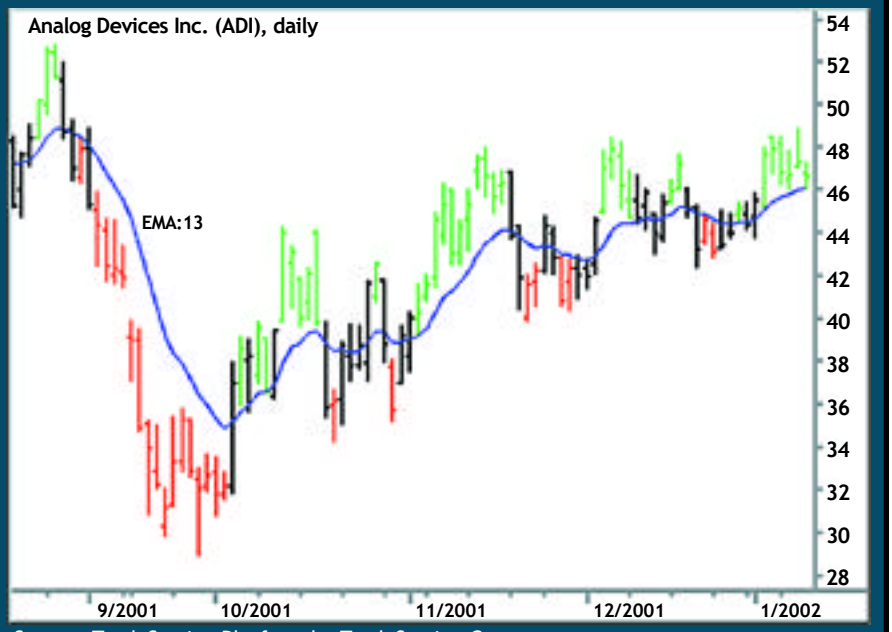
Bar 1 is the lowest low of the current downswing. Bar 2 is the first bar to bar 1's left that has a higher high than bar 1 (remember that inside bars, like the one to bar 1's immediate left, don't count). Bar 3 is the first bar to bar 2's left that has a higher high than bar 2. Draw the three-bar net line to the right from the high of bar 3. The trend is down until price closes above the most recent three-bar net line.



Source: TradeStation Platform by TradeStation Group

FIGURE 4 BULL AND BEAR POWER

Bull power is the high of the current bar minus the 13-bar exponential moving average (EMA) of the close. When the high is above the EMA, bull power is positive. Bear power is the low minus the 13-bar EMA. When the low is below the EMA, bear power is negative. When both the highs and lows are above or below the EMA (the green and red bars), the market may be overbought or oversold, respectively.



Source: TradeStation Platform by TradeStation Group

FIGURE 5 CONFIRMING STRENGTH OR WEAKNESS

The price high at B is higher than the price high at A. Bull power at B is higher than bull power at A, confirming the strength of the uptrend. The price low at D is lower than the price low at C, but bear power at D is higher (less negative) than bear power at C. In the best buy setups, bull power confirms the recent price high, but bear power does not confirm the recent price low. The reverse is true for the best short setups.

Source: TradeStation Platform by TradeStation Group

FIGURE 6 POWERTOOL LONG TRADE

A long signal is given on bar D after it moves above bar C's high (which was the bar when bear power upticked). The exit is on bar E. The three-bar net line is progressively raised as the stock rallies, locking in increasing profits.

Source: TradeStation Platform by TradeStation Group

Exits:

1. Set an initial protective stop below the three-bar net line.
2. Trail a stop below the three-bar net line.

Short Setup:

1. The close is below the three-bar net line.
2. Bear power is below 0.
3. Bull power crosses from below 0 to above 0.
4. Bull power is less than it was yesterday.

Entry: Sell short tomorrow below today's low.

Exits:

1. Set an initial protective stop above the three-bar net line.
2. Trail a stop above the three-bar net line.

Note: "Above" means any small amount above the high or the three-bar net line, e.g., 10 cents for a stock or one tick for a commodity. "Below" means any small amount below the low or the three-bar net line, e.g., 10 cents for a stock or one tick for a commodity.

Two Powertool long trades

In Figure 6, price closes above the three-bar net line on bar A, which means the trend is up. Both bull power and bear power are greater than zero. On bar B, bear power crosses below zero, indicating the market is not too overbought to buy. On bar C, bear power ticks up, so we place a buy stop above the bar-C high.

The next two bars don't penetrate the previous bar's high, so a long trade is not triggered until bar D, which rallies above the previous bar's high. We exit the trade profitably on bar E on a close below the three-bar net line.

The second long trade example (see

Figure 7) is similar to the first: The main difference is that the entry buy stop is hit on the second bar after C, not the third bar as in Figure 6.

Powertool short trade

In Figure 8, price closes below the three-bar net line on bar A, so the trend is down. Both bull power and bear power are less than zero. On bar B, bear power crosses above zero, indicating that the market is not too oversold to sell short. On bar C, bear power ticks down, so we place a sell stop below the bar-C low and get short on bar D. We exit this winning trade on bar E, which closes above the three-bar net line.

Trading Powertool intraday

The first intraday trade example (see Figure 9) occurs on a 30-minute chart of AXP. Price moves above the three-bar net line on bar A, indicating an uptrend. Both bull power and bear power are greater than zero.

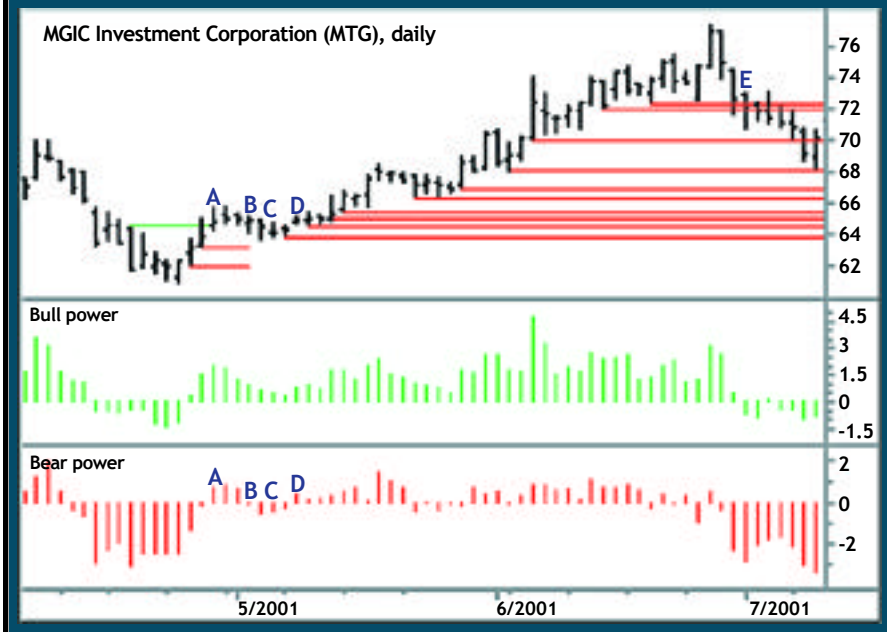
On bar B, bear power crosses below zero, indicating the market is not too overextended to buy. On bar C, bear power ticks up, so we place a buy stop above the bar-C high and go long on bar D. We exit the trade with a significant profit on bar E when price penetrates the three-bar net line.

The reason we don't wait for price to close below the three-bar net line on intraday charts is that intraday bars don't really have closing prices, except for the last bar of the day. The closes of all the previous intraday bars are really just the last trades of those particular intraday periods, so they have far less significance than the closes of daily or weekly bars.

The second intraday example (see Figure 10) is found on a 15-minute chart of MXIM. Price moves below the three-bar net line on bar A, so the trend is down. Both bull power and bear power are less than zero. On bar B, bull power crosses above zero, indicating the market is not too overextended to sell short.

FIGURE 7 CATCHING THE TREND

Here's another winning trade on the long side. Like the example in Figure 6, the trade captured a great deal of the uptrend, entering near its beginning and exiting just after the market peaked.



Source: TradeStation Platform by TradeStation Group

FIGURE 8 ON THE SHORT SIDE

In this example, a short trade was opened at bar D and exited at bar E. The tall price bar two days after bar D almost stopped out the trade, but fortunately, the three-bar net line held, and Powertool hammered out another successful trade.

Source: TradeStation Platform by TradeStation Group

On bar C, bull power ticks down, so we place a sell stop below the bar-C low and get short on bar D. We exit this winning trade on bar E, when price penetrates the three-bar net line.

Why Powertool works

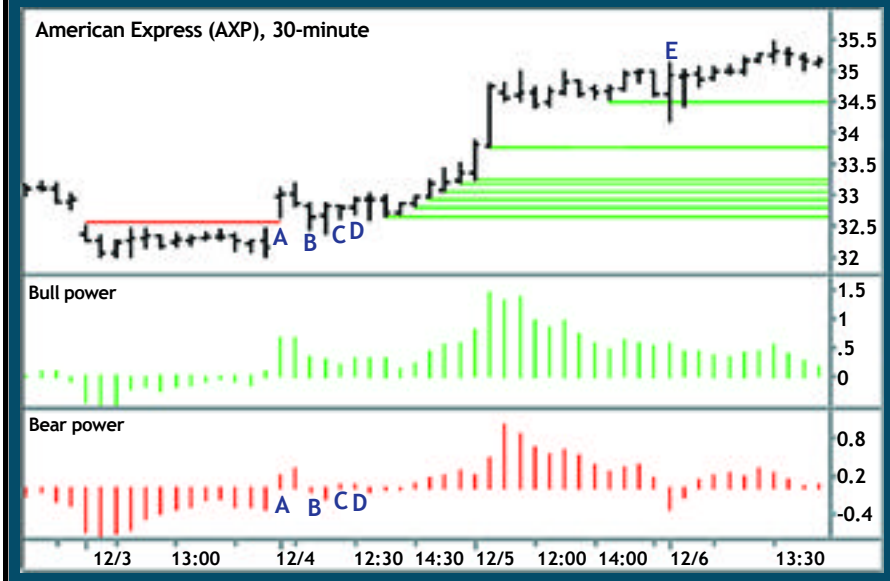
It is very difficult — perhaps impossible — to make money consistently over the long term in stocks or futures by basing trades on one indicator alone. Fortunately, it's not difficult to integrate two or more indicators into a synergetic strategy that features the positive aspects of each.

The Powertool strategy capitalizes on Joseph Stowell's three-bar net line's ability to identify the trend and Dr. Alexander Elder's bull power/bear power indicator's ability to time trades. The result is a strategy that's more reliable than single-indicator strategies and more powerful than many complex, esoteric ones.

For more information on the author see p. 3.

FIGURE 9 WORKING INTRADAY

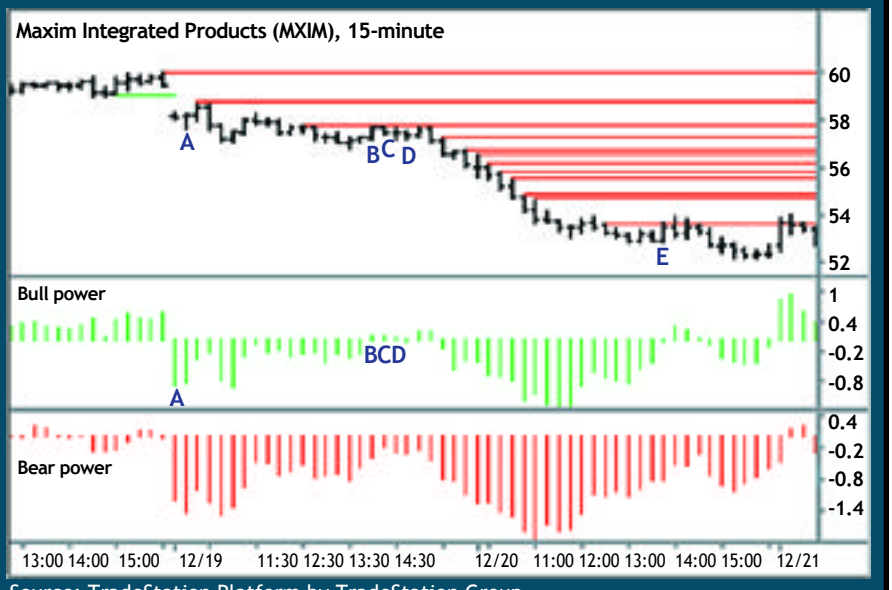
On intraday bars Powertool exits trades based on a penetration of the three-bar net line instead of waiting for a close above or below it. On a 30-minute chart, only the last bar of the day has an actual closing price. The closing prices of all the other bars are really just the last prices of each 30-minute period.



Source: TradeStation Platform by TradeStation Group

FIGURE 10 INTRADAY DOWNTREND

Here, Powertool captures a lengthy downtrend on a 15-minute chart. Price moves below the first three-bar net line at bar A, indicating the stock is in a downtrend.



Source: TradeStation Platform by TradeStation Group

Further reading

Playing for Keeps in Stocks & Futures: Three Top Trading Strategies that Consistently Beat the Markets
by Thomas A. Bierovic
John Wiley & Sons, New York, 2001.

Trading for a Living
by Dr. Alexander Elder
John Wiley & Sons, New York, 1993;
www.elder.com.

Tips for Traders and Investors: Trading U.S. Bonds and Stocks
by Joseph Stowell
Money Management Institute
North Rose, New York.

When two oscillators ARE BETTER THAN ONE

Oscillators such as the relative strength index and stochastics can identify overbought and oversold signals in static, range-bound markets, but they don't fare as well in dynamic, trending markets. Combining the two indicators creates a new indicator that does a better job of catching market turns — regardless of the market environment.

BY THOM HARTLE

Traders use oscillators such as rate-of-change (ROC), the relative strength index (RSI) and stochastics to identify exhaustion points in a market. These indicators typically fluctuate above and below a neutral axis (hence the name oscillator) as the market swings, with high oscillator values reflecting overbought conditions and low oscillator values reflecting oversold conditions.

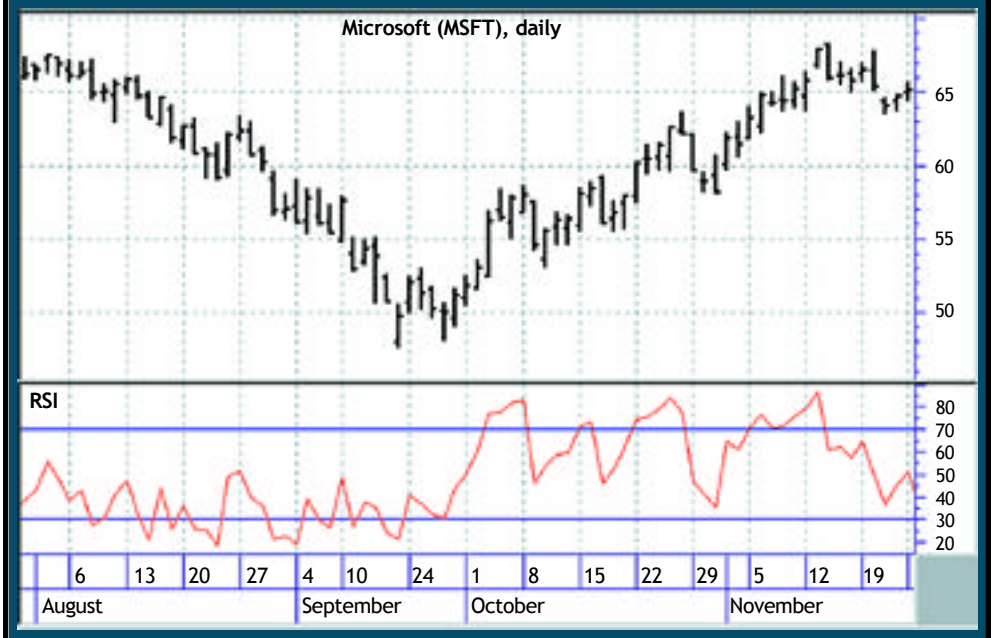
Oscillators are most effective in trading ranges. If the range of values for an oscillator is between zero and 100 (as is the case for the RSI), overbought is typically (i.e., for a default 14-bar indicator) defined as 70 or higher while oversold is 30 or lower. If the market is moving sideways, these levels often correspond closely to swing highs and lows and provide excellent trade points.

However, if the market is trending, the oscillator values will shift, reflecting the power of the trend. During an uptrend, oscillator values are usually skewed to the upside and often never reach oversold levels; similarly, during downtrends, oscillators are pushed to the downside and may not reach their overbought levels. For example, in a strong downtrend, the overbought level may be closer to 55 and the oversold level closer to 15

Figure 1 is a daily chart with a five-day RSI. Notice that dur-

FIGURE 1 TREND INFLUENCE

One drawback of standard oscillators is that they are influenced by strong trends. In this case, a downtrend first pushes RSI values lower, then an uptrend pushes them higher.



Source: MetaStock Professional

ing the downtrend the RSI values are persistently near the oversold level of 30 and never reach the overbought level of 70. Similarly, when the stock was trending up, the RSI never dropped to the oversold level of 30. Ultimately, had you been waiting for the oscillator to indicate an overbought reading in the downtrend (which would have given a sell signal), or an oversold reading during the uptrend (generating a buy signal), you would have missed out.

Despite these drawbacks, it is nevertheless apparent the RSI tended to behave in an orderly manner relative to the trend. The shorter-term swings were still reflected in the RSI and there were somewhat identifiable oversold-overbought ranges during the downtrend (approximately 20-45) and the uptrend (approximately 45-85); the range simply shifted up while Microsoft was in the uptrend.

What is necessary is a tool that will reflect relative overbought and oversold levels by adapting to trend changes such as the one in Figure 1. The Stochastic RSI (StochRSI), which was developed by Tushar Chande, combines elements of the stochastic oscillator and the RSI to create an indicator that captures price turns more effectively in different market conditions. (If you are unfamiliar with the RSI or stochastics, read "Oscillator review," below.)

Oscillator review

The relative strength index (RSI)

Developed by J. Welles Wilder, the relative strength index (RSI) is a momentum oscillator that ranges from 0 to 100. The formula is:

RSI = 100 – (100/[1+RS])

where

RS = relative strength = the average of the up closes over the calculation period (e.g., 10 bars, 14 bars) divided by the average of the down closes over the calculation period.

For example, when calculating a 10-day RSI, if six of the days closed higher than the closes of the days that preceded them, you would subtract the previous closes from the closes for these days, sum the differences, and divide the result by 10 to get the up-close average. (Note that the sum is divided by the total number of days in the lookback period and not the number of up-closing days.)

For the four days that closed lower than the previous day's close, you would subtract the closes of each from the closes of the days that preceded them, sum these differences, and divide by 10 to get the down-close average. If the up-close average was .8 and the down-close average was .4, the relative strength (RS) over this period would be 2.

The resulting RSI would be 100 – (100/[1+2]) = 100 – 33.3 = 66.67.

The stochastic oscillator (%K/%D)

The stochastic oscillator consists of two lines: %K and a moving average of %K called %D.

The basic stochastic calculation compares the most recent close to the price range (high of the range–low of the range) over a particular period. A five-bar stochastic would be the difference between the most recent bar's close and the lowest low of the last five days divided by the difference between the highest high and the lowest low of the last five days; the result is multiplied by 100. The formula for %K is:

$$\%K = 100*\{(C_t-L_n)/(H_n-L_n)\}$$

where:

C_t = the most recent bar's closing price

L_n = the lowest price of the most recent *n* bars

H_n = the highest price of the most recent *n* bars

(for a stochastic calculated on daily bars, the default is five days)

The second line, %D, is simply a three-period moving average of %K (%K,3)

Because this basic "fast" stochastic calculation is very volatile, an additionally smoothed version of the indicator, where the original %D line becomes a new "slow" %K line and a three-period average of this line becomes a "slow" %D line, is more commonly used.

Moving average convergence–divergence (MACD)

Although it is often grouped in with oscillators, the MACD is more of an intermediate-term trend indicator (although it can reflect overbought and oversold conditions).

The default MACD line (which can also be plotted as a histogram, as is the case in the accompanying article) is created by subtracting a 26-period exponential moving average (EMA) of closing prices from a 12-period EMA of closing prices; a nine-period EMA is then applied to the MACD line to create a "signal line."

MACD = EMA(C,12)-EMA(C,26)
Signal line = EMA(MACD,9)

Standard buy signals are given when the MACD crosses above its signal line (preferably when the indicator is at a relatively high level, reflecting an overbought condition); the opposite is true for sell signals.

Combining indicators: The stochastic RSI

The stochastic oscillator measures the closing price relative to the highest high and lowest low over a specified lookback period. Chande used the basic stochastic calculation, but plugged in RSI values for the price values.

The resulting StochRSI measures RSI values relative to recent high and low RSI readings, thus providing a relative reference for what constitutes overbought or oversold. In effect, the StochRSI measures the momentum of a momentum indicator.

Figure 2 is the same daily price chart as Figure 1, except that it has a five-period RSI in the bottom panel and a five-period StochRSI in the middle panel. Unlike the plain RSI, the StochRSI oscillator fluctuates much more evenly above and below its midpoint (neutral line) and regularly reaches its overbought (70) and oversold (30) levels.

The MetaStock formula is for the StochRSI is:

where:

RSI(5) = a five-period RSI;

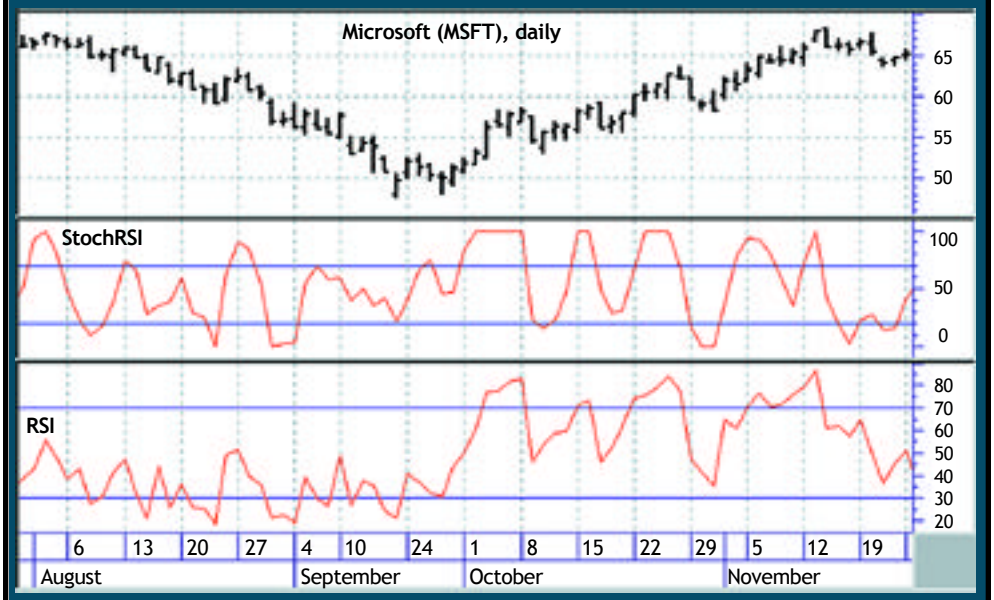
LLV(RSI(5),3 = the lowest low value of the RSI for three bars;

Sum(RSI(5)-LLV(RSI(5),3),3) = the three-bar sum of the difference between the three-bar RSI and the lowest low;

Sum(HHV(RSI(5),3)-LLV(RSI(5),3),3) = the three-bar sum of the difference between the three-bar RSI highest high and the three-bar RSI lowest low.

FIGURE 2 THE STOCHASTIC RSI

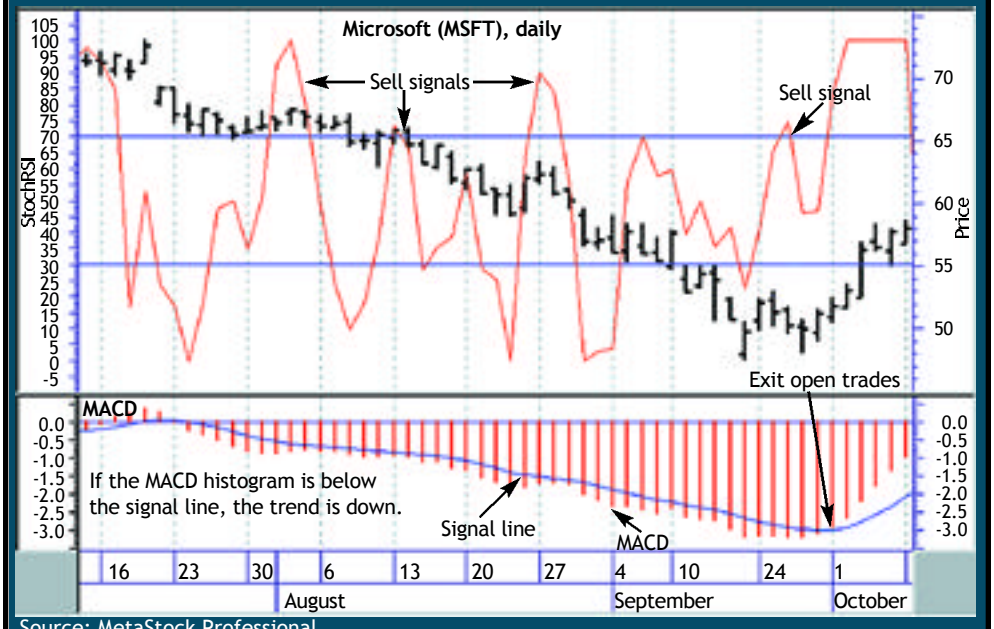
The Stochastic RSI (StochRSI) applies the stochastic oscillator formula to the relative strength index. The StochRSI is much less influenced by the prevailing trend than the standard RSI.



Source: MetaStock Professional

FIGURE 3 TRADING WITH THE STOCHASTIC RSI

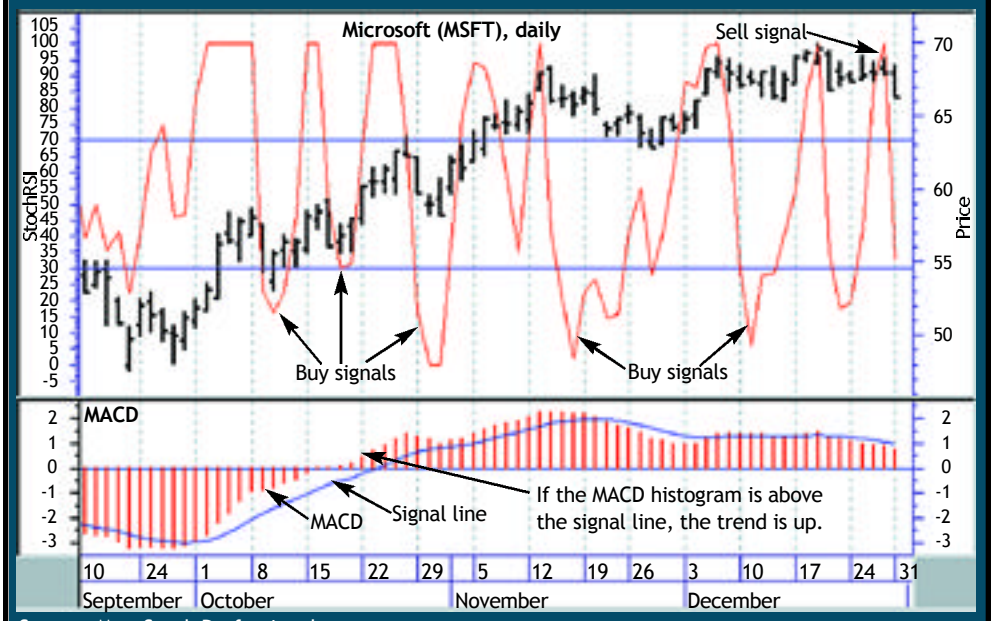
A simple trading system goes short when the MACD indicates an uptrend is in force and the StochRSI registers an overbought signal and turns down. The opposite conditions trigger long trades.



Source: MetaStock Professional

FIGURE 4 CONTROLLING RISK

Risk is controlled on these trades by placing stops above the high (for short trades) or low (for long trades) of the entry bar.



Source: MetaStock Professional

(This formula can be copied from the Active Trader Web site at www.activetradermag.com/code.htm.)

Although the StochRSI shows improvement over the standard RSI, simply buying an oversold condition in a downtrend or shorting an overbought reading in an uptrend is unwise. Combining the StochRSI with an indicator that determines the trend can increase the reliability of overbought and oversold signals. We will demonstrate this using the moving-average convergence-divergence (MACD) indicator.

Figure 3 shows the StochRSI overlaid on the price series with the MACD plotted below. Let's look at the trade signals that result from a simple strategy:

1. Go short on the close if the MACD is below its signal line (indicating a downtrending market) and if the StochRSI has moved above 70 and turned down (indicating short-term momentum is overbought but is losing strength).

2. Place a stop-loss order above the high of the entry bar.

3. Take partial profits if:
   a) you have a $1 gain; or
   b) the StochRSI drops below 30.

4. Use a trailing stop placed above the high of each bar for the remainder of the trade.

5. Exit any remaining open trades when the MACD climbs above its signal line.

Reverse the rules for long trades.

Figure 4 shows Microsoft during the uptrend. Go long on the close if the MACD histogram is above its signal line and the StochRSI has moved below 30 and then turned up. Place a stop below the low of the entry bar. Use the same target and stop rules as previously stated.

Periods when the MACD line is below zero but above the signal line, or when the MACD is above zero but below the signal line, are often congestion periods and can warn of trend reversals. To be conservative, you can require the MACD to be above zero for long trades or below zero for short trades, but you will often miss the first trade of the new trend.

Addressing the drawbacks

A common drawback of many technical indicators is that they are static — they do not adjust to changing market conditions (e.g., trend vs. trading range environments), and the market is undoubtedly a dynamic environment.

The StochRSI is an example of how to make overbought and oversold readings more relevant to the current market conditions. And as is the case with any oscillator, the effectiveness of the StochRSI can be enhanced by incorporating a trend measurement and taking oscillator signals in the direction of the prevailing trend.

For more information on the author see p. 3.

Facing the facts OF RISK AND MONEY MANAGEMENT

The basis of risk control and money management is the relationship between how much you risk per trade and how many consecutive losing trades your strategy might produce. Understanding this relationship will allow you to determine how much capital it will take to trade your strategy successfully.

BY MICHAEL HARRIS

Traders tend to focus most of their efforts on developing and testing trading strategies, often overlooking the fact that even potentially profitable entry and exit rules may end up losing money because of inappropriate risk and money management.

Moreover, system developers sometimes attempt to weave complicated risk and money management rules into their trading methods, ignoring another, perhaps less understood fact: Such rules must be treated as an integral part of the trading system during back-testing to ensure that historical performance results reflect real trading potential.

A common mistake made by new trading system developers is to attempt to increase or maximize equity growth of a historical test by adding to open positions or increasing a new position size using the system's profits. Obviously, this works well for a system with positive historical equity growth, but real-life performance can be disastrous if the trading system does not behave as it did in back-testing.

The same caveat applies to optimized trading systems. Any inappropriate risk and money management technique applied to those systems can be ineffective or even detrimental to real performance.

Perhaps the most important — and the most overlooked — application of risk and money management is how to determine the amount of initial capital required to trade a system or strategy effectively. Some traders have the false perception that a winning trading strategy will always produce a net profit, regardless of the risk the trader assumes. What they fail to consider are two parameters that often consume a trader's capital before a net profit is realized: consecutive losing trades and maximum drawdown. Not surprisingly, the two are related.

Consecutive losing trades

To understand the significance of consecutive losing trades on strategy performance, consider two traders, A and B, both trading the same system. Trader A risks 2 percent on every new position while trader B risks 5 percent. The percentage risk in both cases is based on each trader's initial trading capital.

If both traders start trading the system at the same time and it immediately generates 20 consecutive losers, trader B would be broke while trader A would have lost 40 percent. If the trading system subsequently enters in a profitable period with a long streak of winners, trader A may be in a position to recoup losses and even make a profit whereas trader B is sitting on an empty account, crying bad luck.

Table 1 shows the number of consecutive losing trades (C_L) required to wipe out an account of any size, based on the percent of capital risk per trade (R). The risk per trade is assumed to be constant for all trades.

Many traders simply question the possibility of a losing streak long enough to wipe them out. Even worse, others accept that such a streak is possible but hope it will not happen to them.

The facts of trading life

Fact 1: There is always a finite probability that a trading system will generate enough consecutive losers (or the drawdown required) to completely exhaust any amount of trading capital.

Fact 2: The optimal amount to risk in a trade generated by a newly developed trading system is either the entire trading capital in the first trade (take the loss or the profit and stop trading) or nothing at all.

Fact 3: The percent risk (R) per trade must be set by the trader.

However, all traders should be aware of Fact 1: There is always a finite probability that any trading system will generate as many consecutive losers as required (or the drawdown required) to completely exhaust any amount of trading capital. The proof, which can be found in probability theory, is rather mathematically intensive. The important thing to remember is that regardless of how small that probability is, it is nevertheless finite.

In the face of this reality, a trading system designer must always try to construct systems that historically generate the least possible number of consecutive losers. This is a difficult task because the optimal number of consecutive losers is zero, and this coincides with what is popularly called the "Holy Grail" — a system with 100-percent profitability. (See, "Beyond strategy testing," *Active Trader,* March 2002, p. 70).

Furthermore, a trader should try to minimize the accumulation of losses from consecutive losing trades by minimizing risk on each individual trade. This leads to Fact 2: The optimal amount to risk in the first trade generated by a newly developed trading system is either the entire trading capital (i.e., take the loss or the profit and stop trading) or nothing at all.

The implication of Fact 2 is that any attempt to devise techniques that determine the optimum amount to risk on each trade is the result of fallacious thinking or a false mathematical approach that assumes past behavior of a system leads to knowledge of its future behavior. For example, there is no guarantee a system that is 50-percent profitable annually will not produce a 100-percent drawdown followed by a 150-percent profit — an extreme but plausible scenario.

One can then safely say that any optimal risk strategy assumes a system will behave in the future similar to how it did in the past. Nothing could be further from the truth.

Minimum required capital: Thinking small

A practical approach followed by savvy traders is to take the smallest possible risk. Many well-known, successful traders insist risk per trade should not exceed 1 to 2 percent of trading capital. At such low risk levels, though, it requires a great deal of trading capital to make a trade possible or produce realistic returns.

This is where most problems begin for traders, resulting in actions that can be disastrous for their trading — and even their personal lives. Instead of first determining how much trading capital is necessary to trade a particular system, and how much should be risked on each trade, they start backwards: They select the amount of trading capital first (often based on what they can afford to invest), and *then* worry about a system.

These traders then proceed to risk as much of their capital as possible, hoping that luck will be with them and a good winning streak will occur before a streak of losers completely annihilates their trading capital. We all know what the results will be.

The relationship between risk and trading capital required can be summed up by what we will call the "fundamental equation of risk and money management." This determines the initial minimum capital (M) required to trade a system:

M = S/R (Equation 1)
where
S = the dollar risk per trade, and
R = the risk as a percent of the initial trading capital, in decimal form.

Table 2 shows the minimum trading capital required relative to various risk levels. For example, for a risk level of 2 percent per trade and a dollar risk of $2,000 per trade, the minimum capital requirement is $100,000.

TABLE 1: GOING BUST

R (%)	C_L
1	100
2	50
3	33
4	25
5	20

As the dollar risk increases and the percent risk decreases, the required minimum initial trading capital increases. This forces many small traders to reduce the dollar risk per trade to levels below those dictated by their systems. This has an adverse effect on their system performance: Some potential winning trades turn out to be losers because of premature stop-loss activation — i.e., stops that are too tight. This further increases the number of consecutive losers and accelerates the loss of trading capital.

This leads to Fact 3: Percent risk per trade must be set by the trader. Dollar-trade risk is determined by the trading system and the market. Both determine the minimum required initial trading capital.

One drawback to the M = S/R equation is that dollar risk is not always constant or known in advance. Although some day-trading and short-term trading systems may use constant dollar risk per trade, many systems do not. It is definitely an unknown in the case of trend-following systems and systems that use indicators in their exit strategy.

One solution is to use the historical average losing trade size instead of the average dollar risk per trade. Doing that assumes a sufficient sample of historical trades generated by back-testing. Another approach is to design systems with "pure" money management structure — i.e., systems that use a set dollar stop-loss. In this case, determination of the required minimum trading capital is fairly simple. In futures trading, such systems use a set number of points per contract for the stop-loss. In the case of stock trading, the number of shares to trade is easily calculated, regardless of whether the stop-loss is in points or percentage terms.

If you must use a system where the dollar risk per trade is completely random, an alternative risk equation may be used based on the maximum expected drawdown. Because future values of the drawdown cannot be known in advance, the value for the historical maximum drawdown may be used in conjunction with a safety factor to determine the required trading capital (M_A), as shown in the following formulas:

For futures trading:
$M_A = g + (f * D_R)$ (Equation 2)
where
g = margin requirement per contract, expressed as a whole number
f = a safety factor multiplier
D_R = maximum historical drawdown, in dollars

If the maximum drawdown is $25,000 per contract, the required margin is $7,000 and f is set to 1, the minimum capital per contract traded required is $32,000. If the safety factor is set to 1.5, the new figure is $44,500.

For stock trading:
$M_A = (f * D_R)/g$ (Equation 3)
where
f = a safety factor multiplier
D_R = maximum historical drawdown, in dollars
g = the margin in decimal value (i.e., if you are using 50-percent margin, g is .5).

If the maximum drawdown is $10,000 , the margin is 50 percent and f is set to 1, the result is a requirement of an account of $20,000. If f is set to 1.5, then the required minimum trading capital increases to $30,000.

As you can see, the minimum trading capital required is highly influenced by the safety factor (f). Increasing f results in increased capital size and reduced return on capital, but it also results in reduced risk in terms of equity drawdown and volatility. Decreasing f results in reduced capital requirements, increased return on capital but higher drawdown and volatility.

There is no way to determine optimal safety factor values prior to testing a trading system. A trader should rely on experience and his or her comfort level with the system in order to select the appropriate safety factor. New traders should select a value of at least 2. This will offer them protection from an unexpected increase in their system drawdown that may occur because of factors such as slippage, bad executions, etc.

In those cases where the dollar risk per trade can be known in advance — even if it is just an approximation — you can combine the equations to get a better idea of the minimum capital (M_c) requirement, as follows:

M_c = max{M, M_A} (Equation 4)
where
Max = maximum (i.e., the greater of M and M_A)

For example, consider the following futures trading system parameters:
Risk (R) = 2 percent (0.02)
Dollar risk per contract (S) = $1,000
Drawdown per contract (D_R) = $20,000
Margin per contract (g) = $5,000
Safety factor (f) = 1.75

Using Equation 1, **M = S/R**:
M = $1,000 / 0.02 = $50,000
Using Equation 2, **M_A = g + (f * D_R)**:
M_A = $5,000 + (1.75 * $20,000) = $40,000
Finally, using Equation 4, **M_c = max{M, M_A}**:
M_C = max{$50,000,$40,000} = $50,000

Equation 1 offers little hope for small account traders. As a matter of fact, it shows that as the initial trading capital increases, so do the chances of a trader remaining profitable when compared to another trader using the same trading method with a smaller account size. Again, the reason for this is the tendency of traders with smaller accounts to assume higher risk, which makes them more susceptible to a quick deterioration of their capital because of consecutive losing trades.

Finding risk

Traders who know their dollar risk and have estimated their minimum required capital using Equation 2 or 3 can use the following equations to determine the percent risk per trade (R).

For stocks:
R = (g*s)/(f* D_R)

TABLE 2: MINIMUM TRADING CAPITAL AS A FUNCTION OF DOLLAR RISK

Risk (%)	Dollar risk ($)	Min. capital ($)
1	1,000	100,000
	2,000	200,000
	5,000	500,000
	10,000	1,000,000
2	1,000	50,000
	2,000	100,000
	5,000	250,000
5	1,000	20,000
	2,000	40,000

For futures:
R = S/(G+f* D_R)

Suppose a stock-trading system's historical maximum drawdown is $10,000, the risk per trade is $500, the margin level is 50 percent and f is 1.5:

R = (.5*$500) / (1.5*$10,000) = 0.0166 or 1.67 percent

That is an acceptable risk level, since it would take around 60 consecutive losers to deplete the trading account. This provides a high safety level and increases the likelihood there will be enough funds in the account when the system enters an extended profitability mode.

However, consider a futures trader with a historical drawdown of $16,000 per contract and a margin requirement of $6,000 per contract. The value of f is set to 1.5 and the risk per trade is $5,000 per contract. These numbers result in a per-trade risk of 0.166, or 16.7 percent.

Because this risk level is unacceptable the trader arbitrarily lowers it to 5 percent. As a result, the trading account size should be increased accordingly, using Equation 1:

M = S / R = $5,000 / 0.05 =$100,000

The recommended minimum account balance was initially $30,000. However, the new information shows that the account should be at least $100,000! If this trader decides to stay with the $30,000 account, he or she is risking a quick annihilation of the account, since it would take only six consecutive losers to completely wipe it out. By contrast, if the account were increased to $100,000, it would take 20 consecutive losers for a complete wipeout. This is quite a difference.

Finally, a system trader who has decided on the size of his account and the percent risk to assume per trade can calculate the appropriate dollar risk to take per trade using a variation of Equation 1, as follows:

S = M * R

Percent risk per trade is expressed here as a percentage of the initial trading capital. A different approach is to express it as a percentage of the current trading account equity. However, if the current capital level keeps decreasing because of trading losses, the remaining equity will eventually become too small to trade.

On the other hand, if the trading capital increases, using it to trade often violates back-testing assumptions and can result in larger drawdowns. As a result, this must be taken into consideration during analysis and testing.

Do the math

By using some simple math, you can easily find out whether you run the risk of being a victim of the consecutive losing trades effect. This is the first and most important step toward successful risk and money management.

Advanced money management methods are fine, provided this fundamental step is taken first to assure that risk is under control and at levels low enough to allow a well-designed trading system to get a fair chance at profitability.

For more information on the author see p. 3

Be an idiot, NOT A MORON

Trading has great potential reward, but becoming consistently profitable isn't easy. Only after you accept the hard facts about trading will you take the first step toward success.

BY MARK COOK

To an outsider, the life of a trader can seem utopian — traders have independence, wealth, an exciting job. However, those who actually make their livings in the market know better. The reality is that trading is a profession full of financial and emotional scars.

Still, trading is a sterling example of capitalism at its best: age, race, gender, location, family background and education make no difference in the trading arena. It is truly a vocation with limitless wealth potential, regardless of who you are.

As a result, it's easy to see why so many people want to become traders. While the casualty rate is high, there are winners who get all the spoils. However, before you think you'll earn enough next week to buy an island kingdom and assume the throne, there are some realities you must face.

No, $10,000 is not enough!

Reality No. 1: You must have sufficient capital if you want to be a successful trader. Trading is just like any other business — it requires money to start, and money to make it through the inevitable bad times. Lack of capital leads to an inability to pay your bills. If you are unable to maintain the lifestyle you were accustomed to before trading, you will become frustrated and begin to doubt yourself. That will lead to erosion in your confidence and, eventually, your failure as a trader.

If you want to succeed, you need to enter the gladiatorial arena of trading with an adequate weapon. Going into battle with a putty knife will do you little good against seasoned traders wielding swords.

Give it some time

Reality No. 2: Great traders aren't made overnight. Education takes time and is a product of experience — there is no shortcut.

It typically takes many years to become a consistently profitable trader, yet many novices believe they should only have to spend a year (or less) learning the ropes. Imagine being at the wedding altar and, halfway through the ceremony, saying, "Oh, by the way, if this doesn't work after a year, I'm done." It would certainly put the phrase "left standing at the altar" into perspective.

The same is true of trading. If you make a long-term commitment, the experience will be positive, and not just monetarily. Many professional traders have not only enhanced their market education while trading, they have also enriched other areas of their lives. The mental dexterity necessary to navigate the treacherous waters of trading will develop your mind. Weightlifters spend years building muscle tissue. Traders spend years building brain tissue.

Wanted: Dynamos with quick reflexes

Reality No. 3: You must have a lot of energy to trade successfully. Watch a veteran trader and you will see a vibrant person with an inbred sense of quickly maneuvering around his trading setup, intuitively pressing buttons and clicking the mouse. The required decision mak-

ing is done in an instant.

Trading generally does not provide the luxury of "sleeping on it" when a decision needs to be made. In many instances, an opportunity presents itself for only a short period of time. If you are energetic and reactionary, enter the fray. If you are passive and contemplating, stay away.

Check your opinions at the door, please

Reality No. 4: Traders cannot have preconceived notions about the market. Successful traders know this. Sir John Templeton, the legendary fund trader, was once asked, "What is the market going to do?" He calmly replied, "Fluctuate."

His one-word answer captured the realism and objectivity all traders must have. Be the mouse that snatches a bit of cheese from the trap quickly before it cracks your neck. Don't be the greedy mouse that gets caught in the trap because it has to have it all. Live to fight another day. Bulls get fed, bears get fed, hogs get slaughtered.

Well, duh

Reality No. 5: There is risk in trading. If reading this makes you ask, "Do you think I am an idiot?" remember there are two types of people in this world: idiots and morons. An idiot is a person who makes one mistake; a moron is someone who is a perpetual idiot. Therefore, the highest aspiration you can have is to become an idiot.

Perfection is not humanly possible. Taking appropriate risk is a necessity in trading. Traders who say, "I don't want any risk," have only one recourse: strap themselves in bed and stay there all day.

Risks abound no matter what you do or where you go. The key is taking acceptable risks. It's a bit difficult to quantify "acceptable," but it's safe to say that exposing yourself to a potential loss of half your trading capital is totally unacceptable.

Veteran traders often say, "Expect the worst; if it doesn't happen, it's been a good day." A mistake "moron" traders often make is trading too much size relative to their equity. For example, if you're going to trade a full-size S&P futures contract, you should have at least $50,000 of capital available for that contract. If and when the worst does happen, that is sufficient margin to live to fight another day. Otherwise, your trading business will be pushing up daisies.

It's just as bad to trade too little size without having a plan. That is like slowly bleeding to death, one drop at a time.

There are good traders and bad traders, novice traders and veteran traders. However, there are no bad, veteran traders.

In assessing a trader, the first question should be, "How long have you been trading?" If the answer is 10 years or more, you don't need to ask any more questions. You can be assured that trader has done well — otherwise, he or she would have quit long before then.

Just an acquaintance

Reality No. 6: Success is not your friend. Handle success, enjoy success — but keep in mind that it is your greatest nemesis. Many times, traders equate success with winning, and when they are enjoying a winning streak, look out! A disease called Walk-on-Wateritis engulfs them. They are immortal, they are great … they are dead meat!

Ego sank the Titanic; the iceberg just happened to be in the neighborhood. Going too fast and not feeling any fear in a treacherous environment spells disaster. Because many traders have trouble dealing with winning, here's a plan: Get off the Titanic in the middle of the ocean and get into a rowboat in a five-foot pond. Trade smaller!

It's human nature, especially in a hot streak, to let your winnings ride on the next bet — i.e., "pyramid" your winnings. However, you will eventually have a losing trade — it is inevitable. Pyramiding is short-sided and greedy. If you feel the state of Titanic invulnerability while trading, you will soon find your trading business swimming with the fishes.

Don't try to turn a single into a triple

Reality No. 7: Traders are only successful once they achieve consistency. Consecutive winning days reflect a synchronicity with market conditions. Just as a baseball player adds points to his batting average during a long hitting streak, a pro trader knows that the bottom line grows exponentially as consistent wins accrue.

The cardinal sin of trading is letting a profitable trade turn into a loss. This can lead to a winning day finishing in red ink, and a winning month going south in the final week.

This will happen occasionally; if it happens repeatedly, though, it will end your career. While controlling your losses is crucial to successful trading, protecting your gains is equally important. The mindset that your winnings from successful trades are profits and not principle (and therefore need not be put back into your trading account) is a juvenile approach; such childish tendencies must mature.

Taking acceptable risk is a necessity in trading. Traders who say, "I don't want any risk," have only one recourse: strap themselves in bed and stay there all day.

The next time you are in a profitable position, think not how wealthy you are becoming, but how distraught you will be if that trade turns into a loser. The completeness of trading involves ringing that cash register and locking the drawer. The biggest thief is usually in the mirror.

Live the reality, not the dream

Success in trading does exist, and traders who have reached that level have reaped the benefits. Theoretically, a pro trader could buy that island and wear the king's crown. However, the reality is that great traders have something just as good — satisfaction.

For more information on the author see p. 3

Improving the curve:
The Parabolic plus noise-filter system

If you're interested in mechanical trend-following tools and trailing-stop techniques, read on and find out how one trader found the Parabolic system could be made more robust and reliable by adding simple filters.

BY DENNIS MEYERS, PH. D.

FIGURE 1 THE PARABOLIC STOP

The Parabolic stop-loss moves closer and closer to price (note the October uptrend) as a price move continues. It locks in increasingly higher levels of profit until the stop is hit and a new position in the opposite direction is established.

Source: Meyers Analytics and TradeStation Platform by TradeStation Group

The Parabolic stop concept — a dynamic trailing stop approach — has been studied and applied to the markets for years in one form or another. However, most trading software only allows you to apply certain default values for this tool, which can result in an indicator that is too rigid to withstand the level of random movement, or noise, typically in the market.

We will look at systematic ways to modify the Parabolic, including using a "noise filter," to see if its performance can be improved.

Parabolic background

The Parabolic Time/Price System was introduced by J. Welles Wilder in *New Concepts in Technical Trading Systems* (1978, Trend Research). It is based on the Parabolic stop, a trend-following tool that is always long or short the market. The Parabolic trailing stop looks like a parabolic curve when plotted on a price chart, hence its name.

The Parabolic is a trailing stop that initially is far enough away from the entry price so price

retracements in the early stages of the trend do not stop you out of your position. As the price trend matures, the trailing stop moves closer to price at an accelerated rate, until the current position is stopped out and a new position in the opposite direction is simultaneously established, which is why the Parabolic is referred to as a stop-and-reverse (SAR) system. (For those unfamiliar with this tool, see Technical Tool Insight in the February 2002 issue of *Active Trader*, p. 80.)

The shape, slope and speed of the Parabolic curve is controlled by three parameters: the starting acceleration factor (startAF); the increment by which the starting acceleration factor can change (incAF) when a new price high or low is made; and the maximum acceleration factor (maxAF), the highest value the acceleration factor can reach.

We will demonstrate the calculation of the Parabolic with a daily bar chart and table, Figure 1 , and Table 1, respectively.

The Parabolic parameters are startAF = 0.02, incAF = 0.02 and maxAF = 0.20. On Oct. 2, 2001, IBM broke above the previous day's down-sloping Parabolic stop level of 92.83, triggering a long trade at this price. A stop-loss placed at the lowest low of the previous downtrend at 87.49 becomes the initial value that will be used to calculate future Parabolic stop-loss values.

The next day, Oct. 3, 2001, IBM made a new high of 97.62. The formula for calculating the Parabolic stop-loss is:

New stop-loss = Old stop-loss + AF*(EP – Old stop loss)

where

EP (extreme price) = the highest high encountered while long.

TABLE 1 IBM PARABOLIC STOP-LOSS CALCULATION

The Parabolic stop-loss values are shown for more than a little more than a month of daily data in IBM. The standard Parabolic hugs the price series increasingly closer as a trend matures, and is susceptible to being triggered unnecessarily by market noise.

Date	H	L	C	EP	AF	Parabolic
10/2/01	——	——	——	——	——	87.49
10/3/01	97.62	92.40	96.79	97.62	0.02	87.69
10/4/01	98.88	96.80	97.30	98.88	0.04	88.14
10/5/01	98.45	95.37	98.01	98.88	0.06	88.78
10/8/01	99.00	96.75	98.11	99.00	0.06	89.40
10/9/01	98.50	96.76	97.14	99.00	0.08	90.17
10/10/01	97.30	94.90	97.14	99.00	0.08	90.87
10/11/01	99.35	96.65	99.24	99.35	0.08	91.55
10/12/01	101.00	98.00	100.83	101.00	0.10	92.50
10/15/01	102.76	100.00	102.00	102.76	0.12	93.73
10/16/01	103.00	99.66	102.11	103.00	0.14	95.03
10/17/01	106.45	102.96	102.96	106.45	0.16	96.85
10/18/01	103.75	100.78	101.25	106.45	0.18	98.58
10/19/01	102.74	100.07	102.56	106.45	0.18	100.00
10/22/01	105.78	101.90	105.17	106.45	0.18	100.07
10/23/01	106.69	104.55	105.69	106.69	0.18	101.26
10/24/01	108.75	106.09	108.57	108.75	0.20	102.76
10/25/01	110.85	106.75	110.85	110.85	0.20	104.38
10/26/01	112.10	109.62	111.15	112.10	0.20	105.92
10/29/01	110.70	108.66	108.67	112.10	0.20	107.16
10/30/01	109.75	107.76	108.67	112.10	0.20	107.76
10/31/01	111.12	108.17	108.18	112.10	0.20	107.76
11/1/01	110.17	106.90	109.82	106.90	0.20	112.10
11/2/01	110.25	108.77	109.36	106.90	0.02	112.00
11/5/01	110.59	109.08	109.94	106.90	0.02	111.89
11/6/01	114.80	109.40	114.18	114.80	0.02	106.90
11/7/01	115.20	113.03	113.88	115.20	0.02	107.07
11/8/01	115.56	113.61	113.85	115.56	0.04	107.41
11/9/01	114.90	113.10	114.09	115.56	0.06	107.90

TABLE 2 OPTIMUM PARAMETER VALUES FOR IN-SAMPLE DATA

The initial test data produced the following parameter values for the Parabxot. To determine if these values have any chance of succeeding in real trading, they must be tested on new, out-of-sample data.

Start date	End date	StartAF	IncAF	MaxAF	xo	xpr
9/18/01	10/26/01	0.01	0.045	0.20	0.05	0

TABLE 3 IN-SAMPLE PERFORMANCE SUMMARY FOR THE PARABXOT SYSTEM

Tested on QQQ (30-minute bars) from Sept. 18, 2001, to Oct. 26, 2001. Slippage and commissions are not included.

Performance summary: All trades			
Total net profit ($)	11,770	Open position P/L ($)	0
Gross profit ($)	16,770	Gross loss ($)	-5,000
Total # of trades	32	Percent profitable (%)	59
Number winning trades	19	Number losing trades	13
Largest winning trade ($)	2,980	Largest losing trade ($)	-710
Average winning trade ($)	882.632	Average losing trade ($)	-384.615
Ratio avg. win/avg. loss	2.295	Avg. trade(win & loss) ($)	367.813
Max. consec. winners	4	Max. consec. losers	4
Avg. # bars in winners	16	Avg. # bars in losers	8
Max. intraday drawdown ($)	-2,540		
Profit factor	3.354	Max. # contracts held	1
Performance summary: Long trades			
Total net profit ($)	8,450	Open position P/L ($)	0
Gross profit ($)	10,720	Gross loss ($)	-2,270
Total # of trades	16	Percent profitable (%)	63
Number winning trades	10	Number losing trades	6
Largest winning trade ($)	2,980	Largest losing trade ($)	-710
Average winning trade ($)	1,072	Average losing trade ($)	-378.33
Ratio avg. win/avg loss	2.833	Avg. trade(win & loss) ($)	528.13
Max. consec. winners	4	Max. consec. losers	2
Avg. # bars in winners	18	Avg. # bars in losers	9
Max intraday drawdown ($)	-1,600		
Profit factor	4.722	Max. # contracts held	1
Performance summary: Short trades			
Total net profit ($)	3,320	Open position P/L ($)	0
Gross profit ($)	6,050	Gross loss ($)	-2,730
Total # of trades	16	Percent profitable (%)	56%
Number winning trades	9	Number losing trades	7
Largest winning trade ($)	1,420	Largest losing trade ($)	-550
Average winning trade ($)	672.22	Average losing trade ($)	-390
Ratio avg win/avg loss	1.72	Avg. trade(win & loss) ($)	207.50
Max. consec. winners	5	Max. consec. losers	3
Avg. # bars in winners	13	Avg. # bars in losers	6
Max. intraday drawdown ($)	-2,300		
Profit factor	2.216	Max. # contracts held	1

Source: TradeStation Platform by TradeStation Group

In this case, the old stop loss is 87.49, the AF is .02 and the EP is 97.62. As a result the new stop loss is 87.49 + 0.02*(97.62-87.49) = 87.69.

The AF is increased only if a new high is made, and it can only be increased to the maximum AF. Because IBM made a new high on Oct. 3, the AF now increases by 0.02 to 0.04. On Oct. 4, IBM made a new high of 98.88, which becomes the new EP. Thus, the new stop-loss is 87.69 + 0.04*(98.88-87.49) = 88.14, and the AF increases from 0.04 to 0.06.

On Oct. 5, IBM did not make a new high. Accordingly, the AF remains at 0.06 and the EP remains at 98.88. The new stop-loss is 88.14 + 0.06*(98.88-88.14) = 88.78.

In addition to these calculations, the Parabolic stop loss for tomorrow cannot be placed within the price range of the current or previous bar. If you were long, the stop loss would be placed at the lowest of today's or yesterday's low, as it was on Oct. 22, 2001. If you were short, the stop loss would be placed at the highest of today's or yesterday's high.

Most software packages fix the starting AF at 0.02 and allow you to vary only the AF increment and the AF maximum. This restriction hampers the trend-following abilities of the Parabolic. The following study will allow different starting AF values to see if such changes can improve the Parabolic system's performance.

Withstanding market noise

As the Parabolic stop loss hugs the price curve, it is often penetrated by a price bar by a small amount, as it was on Nov. 1, 2001, in Figure 1. The price then immediately turns around and resumes the previous trend, resulting in a costly whipsaw loss.

Many whipsaw losses are caused by noise or randomness in price action. The ability to ignore small penetrations that constitute noise would be a real improvement to the Parabolic. To achieve this goal we will include a variable that prevents the Parabolic stop from reversing unless penetrated by a specific amount.

The new parameter is xo, which

stands for "noise crossover increment." In addition, the starting value for the stop loss is always set at the previous low or high. In some instances the system will produce fewer whipsaws if the starting value of the stop loss is the previous high or low plus or minus a certain amount (xpr). This new five-parameter Parabolic is called Parabxot.

The Parabxot: Parabolic plus noise filter

We will use the following rules to trade the Parabxot: When the current bar exceeds the previous value of the Parabxot by the amount xo, the system will go long. When the current bar falls below the previous value of the Parabxot by the amount xo, the system will go short.

Buy rule:
Buy Parabxot[1] + xo Stop.

Sell rule:
Sell Parabxot[1] – xo Stop.

where
Parabxot[1] = yesterday's value of Parabxot.

Testing the Parabxot using walk-forward optimization

There are five system parameters to determine:

1. **StartAF**, the starting value of AF.
2. **IncAF**, the amount AF is incremented.
3. **maxAF**, the maximum amount AF can go to.
4. **xo**, the noise amount the price bar has to cross over the Parabolic curve in order to generate a buy or sell signal.
5. **xpr**, the extra amount to add or subtract from the starting price of the Parabolic stop loss.

To test this system, we will use the Nasdaq 100 Index Tracking stock (QQQ). We will use 30-minute QQQ bars from Sept. 18, 2001, to Oct. 26, 2001 (the in-sample data), to develop the system parameters. We will use 30-minute QQQ bars from Oct. 29, 2001, to Nov. 9, 2001 (the out-of-sample data), to test the

TABLE 4 OUT-OF-SAMPLE PERFORMANCE SUMMARY FOR PARABXOT SYSTEM

Tested on QQQ (30-minute bars) from Oct. 26, 2001, to Nov. 9, 2001 (slippage and commissions not included). Performance was in line with the in-sample test results, suggesting the Parabxot system is robust enough to fare well in actual trading.

Performance summary: All trades			
Total net profit ($)	3,500	Open position P/L ($)	0
Gross profit ($)	6,020	Gross loss ($)	-2,520
Total # of trades	12	Percent profitable (%)	58.33
Number winning trades	7	Number losing trades	5
Largest winning trade ($)	2,580	Largest losing trade ($)	$ -890
Average winning trade ($)	860	Average losing trade ($)	-504
Ratio avg. win/avg. loss	1.71	Avg. trade(win & loss) ($)	291.67
Max. consec. winners	2	Max. consec. losers	1
Avg. # bars in winners	17	Avg. # bars in losers	6
Max. intraday drawdown ($)	-2,070		
Profit factor	2.39	Max. # contracts held	1
Performance summary: Long trades			
Total net profit ($)	2,480	Open position P/L ($)	0
Gross profit ($)	2,570	Gross loss ($)	-90
Total # of trades	6	Percent profitable (%)	83.33
Number winning trades	5	Number losing trades	1
Largest winning trade ($)	1,180	Largest losing trade ($)	-90
Average winning trade ($)	514	Average losing trade ($)	-90
Ratio avg. win/avg loss	5.71	Avg. trade(win & loss) ($)	413.33
Max. consec. winners	5	Max. consec. losers	1
Avg. # bars in winners	15	Avg. # bars in losers	7
Max intraday drawdown ($)	-580		
Profit factor	28.56	Max. # contracts held	1
Performance summary: Short trades			
Total net profit ($)	1,020	Open position P/L ($)	0
Gross profit ($)	3,450	Gross loss ($)	-2,430
Total # of trades	6	Percent profitable (%)	33.33%
Number winning trades	92	Number losing trades	4
Largest winning trade ($)	2,580	Largest losing trade ($)	-890
Average winning trade ($)	1,725	Average losing trade ($)	-607.50
Ratio avg win/avg loss	2.84	Avg. trade(win & loss) ($)	170
Max. consec. winners	1	Max. consec. losers	4
Avg. # bars in winners	22	Avg. # bars in losers	6
Max. intraday drawdown ($)	-2,430		
Profit factor	1.42	Max. # contracts held	1

Source: TradeStation Platform by TradeStation Group

TABLE 5 TRADE-BY-TRADE SUMMARY

QQQ 30-min. Parabxot system; Trade size = 1,000 shares; Sept.18, 2001 to Nov. 9, 2001

Entry date	Entry time		Entry price	Exit date	Exit time	Exit price	Bars in trade	Trade $ P&L	Trade % P&L	Trade max.$ pft.	Time	Trade max.$ DD	Time
9/18/01	15:30	Sell	30.72	9/19/01	15:30	29.30	14	1,420	4.62%	1,970	14:30	0	15:30
9/19/01	15:30	Buy	29.30	9/20/01	15:30	29.14	14	-160	-0.55%	810	16:00	-240	13:00
9/20/01	15:30	Sell	29.14	9/21/01	13:30	28.44	10	700	2.40%	1,440	10:00	-60	15:30
9/21/01	13:30	Buy	28.44	9/25/01	12:30	29.71	26	1,270	4.47%	1,660	10:30	-430	14:00
9/25/01	12:30	Sell	29.71	9/25/01	16:15	29.70	8	10	0.03%	570	14:00	0	12:30
9/25/01	16:15	Exit	29.70	9/26/01	11:30	29.00	4	-700	-2.36%	0	16:15	-700	11:30
9/26/01	11:30	Sell	29.00	9/27/01	14:30	27.73	20	1,270	4.38%	1,500	12:30	-70	11:30
9/27/01	14:30	Buy	27.73	9/28/01	15:00	28.88	15	1,150	4.15%	1,440	13:30	0	14:30
9/28/01	15:00	Sell	28.88	10/1/01	14:00	28.80	12	80	0.28%	640	11:30	-320	15:30
10/1/01	14:00	Buy	28.80	10/2/01	14:30	28.89	15	90	0.31%	540	11:30	-290	15:30
10/2/01	14:30	Sell	28.89	10/3/01	11:00	29.16	7	-270	-0.93%	450	15:00	-270	11:00
10/3/01	11:00	Buy	29.16	10/4/01	14:00	32.13	20	2,970	10.19%	3,480	11:30	0	11:00
10/4/01	14:00	Sell	32.13	10/5/01	13:30	31.17	13	960	2.99%	1,820	10:30	-70	14:00
10/5/01	13:30	Buy	31.17	10/8/01	14:30	31.73	16	560	1.80%	980	11:30	-70	13:30
10/8/01	14:30	Sell	31.73	10/9/01	15:30	31.43	16	300	0.95%	570	12:00	-160	16:15
10/9/01	15:30	Buy	31.43	10/9/01	16:00	30.96	1	-470	-1.50%	0	15:30	-470	16:00
10/9/01	16:00	Sell	30.96	10/10/01	10:00	31.48	2	-520	-1.68%	0	16:00	-520	10:00
10/10/01	10:00	Buy	31.48	10/11/01	14:30	34.03	23	2,550	8.10%	3,070	13:30	0	10:00
10/11/01	14:30	Sell	34.03	10/11/01	16:00	34.59	3	-560	-1.65%	60	15:00	-560	16:00
10/11/01	16:00	Buy	34.59	10/12/01	12:00	33.95	6	-640	-1.85%	110	10:30	-640	12:00
10/12/01	12:00	Sell	33.95	10/12/01	16:00	34.49	8	-540	-1.59%	640	13:00	-540	16:00
10/12/01	1600	Buy	34.49	10/17/01	10:30	34.37	31	-120	-0.35%	900	10:00	-680	10:00
10/17/01	10:30	Sell	34.37	10/18/01	11:30	33.30	16	1,070	3.11%	1,870	16:15	-570	11:00
10/18/01	11:30	Buy	33.30	10/22/01	13:30	33.84	32	540	1.62%	820	10:00	-840	12:00
10/22/01	13:30	Sell	33.84	10/22/01	16:00	34.36	5	-520	-1.54%	110	14:00	-520	16:00
10/22/01	16:00	Buy	34.36	10/23/01	13:00	34.55	8	190	0.55%	920	10:30	0	16:00
10/23/01	13:00	Sell	34.55	10/24/01	10:30	34.85	9	-300	-0.87%	220	15:00	-420	14:00
10/24/01	10:30	Buy	34.85	10/24/01	16:15	35.37	12	520	1.49%	630	13:30	0	10:30
10/24/01	16:15	Exit	35.37	10/25/01	13:30	35.09	8	280	0.79%	1,010	10:30	0	16:15
10/25/01	13:30	Buy	35.09	10/26/01	12:00	36.27	11	1,180	3.36%	1,710	10:30	0	13:30
Out-of-sample trades (below)													
10/26/01	12:00	Sell	36.27	10/30/01	14:00	33.69	32	2,580	7.11%	3,090	10:30	-480	13:00
10/30/01	14:00	Buy	33.69	10/31/01	16:00	33.99	18	300	0.89%	1,120	15:00	-300	16:15
10/31/01	16:00	Sell	33.99	11/1/01	11:30	34.88	5	-890	-2.62%	50	16:15	-890	11:30
11/1/01	11:30	Buy	34.88	11/2/01	11:00	34.99	13	110	0.32%	620	10:00	-320	12:30
11/2/01	11:00	Sell	34.99	11/2/01	12:30	35.79	3	-800	-2.29%	0	11:00	-800	12:30
11/2/01	12:30	Buy	35.79	11/5/01	16:00	36.76	21	970	2.71%	1,270	15:00	-380	14:00
11/5/01	16:00	Sell	36.76	11/6/01	14:30	36.97	11	-210	-0.57%	310	14:00	-240	11:00
11/6/01	14:30	Buy	36.97	11/7/01	14:30	38.15	14	1,180	3.19%	1,580	13:30	-20	15:00
11/7/01	14:30	Sell	38.15	11/8/01	10:00	38.68	5	-530	-1.39%	200	16:00	-530	10:00
11/8/01	10:00	Buy	38.68	11/8/01	14:30	38.69	9	10	0.03%	600	11:00	0	10:00
11/8/01	14:30	Sell	38.69	11/9/01	13:00	37.82	11	870	2.25%	1,170	11:30	0	14:30
11/9/01	13:00	Buy	37.82	11/9/01	16:15	37.73	7	-90	-0.24%	130	13:30	-220	14:30

Source: Meyers Analytics

parameters found in the first segment.

The two data sets are required because parameter values found through testing the in-sample data set are meaningless unless they are applied on a second, "unseen" data set — the out-of-sample data. The process of walking the system forward through different data sets simulates using back-tested parameters in real, future trading. In other words, without testing on out-of-sample data, there is no way to tell if the system will work in the future.

Parabxot test results

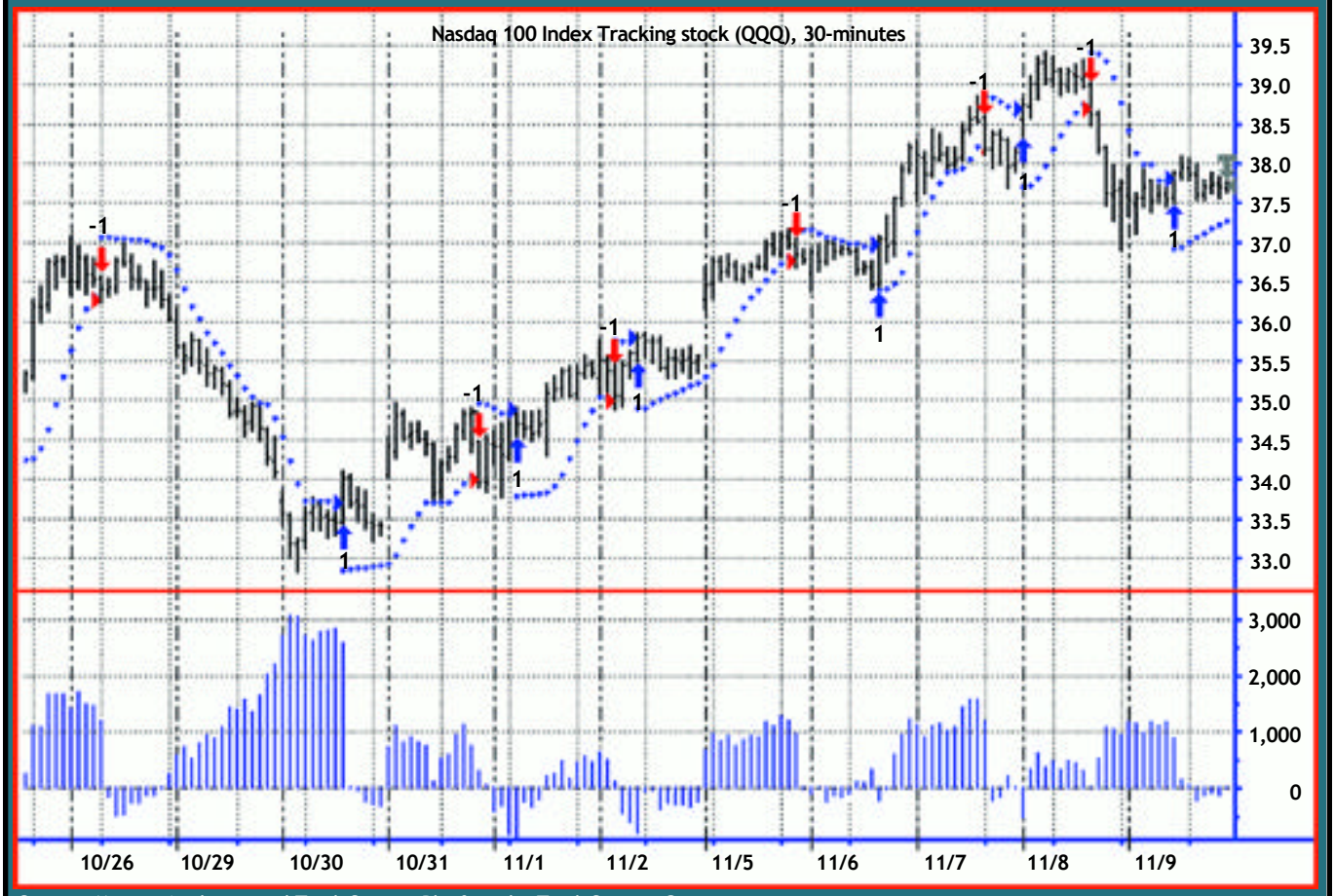
The best parameter values will be defined as those that result in the best net profit and best total winning bars to total losing bars ratio, along with the minimum drawdown and minimum largest losing trade. Also, the results should be stable, e.g., the profits, wins, and drawdowns should not change by much as the parameters move by small amounts.

In choosing the "best" parameters, we considered only those parameter sets that resulted in four or fewer consecutive losses, because in real-time trading it is difficult to follow a system that has more than four losses in a row. Table 2 shows the optimum parameters from the test data series.

Table 3 is the performance summary of the in-sample segment from Sept. 18, 2001, to Oct. 26, 2001,

FIGURE 2 PARABXOT TRADES

The Parabxot system did a good job of capturing intraday moves in QQQ, performing better on long trades than short trades because of an extended uptrend in the test period.



Source: Meyers Analytics and TradeStation Platform by TradeStation Group

using the optimum parameters for the test windows shown in Table 2.

Table 4 is the performance summary of the out-of-sample data segment from Oct. 29, 2001, to Nov. 9, 2001. This performance represents what would have happened in real time if one used the parameters found in the test sections. Slippage and commissions are not included.

Table 5 shows a specialized percentage trade-by-trade summary from Sept. 18, 2001, to Nov. 9, 2001. Note that the trades from Oct. 26, 2001, to Nov. 9, 2001 are the out-of-sample trades generated from the optimized parameters from the test sections of Sept. 18, 2001 to Oct. 26, 2001.

Figure 2 is a 30-minute chart of QQQ with the Parabxot indicator superimposed and the buy and sell signals from the trade-by-trade summary of Table 5 indicated on the chart by the numbers 1 (buy) and –1 (sell). Also included at the bottom of the chart is the bar-by-bar profit or loss of each trade. The lower plot tracks the run-up and drawdown of each trade.

Discussion of system performance

The in-sample performance summary in Table 3 and the out-of-sample performance summary in Table 4 show the out-of-sample performance was consistent with the test sample performance. The out-of-sample section's average bars in winners and losers, drawdowns, and profit factors were very close to the in-sample section's figures. This consistency indicates that five weeks of 30-minute price data was enough to capture the intraday dynamics of QQQ.

Table 5 reveals the system performed better on long trades than short trades. The superior long performance was the result of a longer uptrend in QQQ during the test period. The average trade (win and loss) was $367 in the test section and $291 in the out-of-sample section, indicating stability. There were no unusually large winners or losers, which implies steady returns.

The Parabxot system did a good job in catching every major intraday trend of QQQ, minimizing the whipsaw losses that occur in any trading system, and maximizing the profits from the major intraday trend moves of QQQ.

For more information on the author see p. 3.

Pristine variation

Markets: Stocks, stock index futures and index tracking stocks (SPDRs, DIAs, QQQs).

System logic:
This is a basic pullback strategy developed by Oliver Velez and Greg Capra and explained in their book *Tools and Tactics for the Master Day Trader* (McGraw-Hill, 2000). It is based on a pattern consisting of three specific down bars in a row following a recent market peak. It goes long when the market trades above the high of the most recent bar. Each of the three closes of the down bars must be lower than the opens, while the highs must be lower than the highs of the previous bars.

The logic is straightforward. No matter the time frame, it makes sense that a market is poised for an up move after three down bars. This is a long-only strategy.

The entry strategy is accompanied by stops that cut losses short when the trade goes wrong and take profits when the trade is profitable but there are signs the market has overextended itself.

A position-size model was added to the original entry and exit rules that decreases the trade size the more volatile and risky the market. In this case, the position size is based on four times the 10-day average true range (ATR), with a maximum risk per trade of no more than 5 percent of available equity:

Shares to trade = AC * PR / ATR

where

AC = Available capital
PR = Percent risked
ATR = Four times 10-day Average True Range

Rules:
1. Setup: Look for three consecutive down bars with closes lower than their opens and successively lower highs.
2. Entry: Go long on a move above the last (and lowest) of the three down bars.
3. Trailing stop: Exit if price breaks yesterday's low.
4. Profit taking: Take profits on the open if the market gaps higher than yesterday's high.
5. "Reversal" stop: Exit if today's high is higher than yesterday's high, but today's close is lower than yesterday's close.

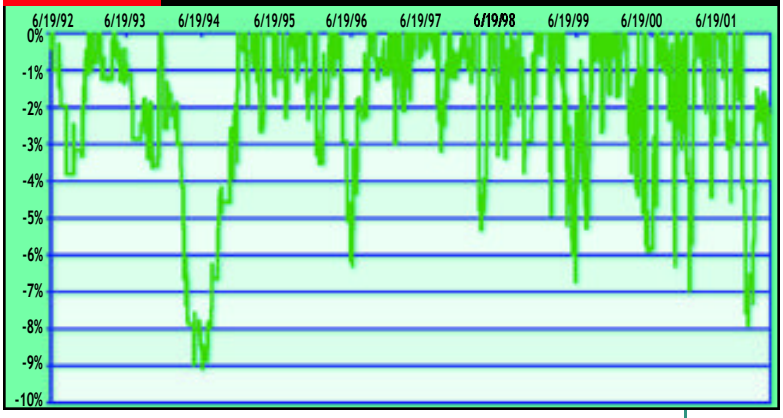
Test period:
June 1992 to January 2002

Test data: Daily stock prices for the 30 highest capitalized stocks in the Nasdaq 100 index (as of fall 2001). $20 deducted per trade for slippage and commission.

Starting equity: $100,000 (nominal)

Buy-and-hold stats:
DJIA: Total return — 188 percent; Max DD — 31.5 percent (current); Longest flat —25 months (current).
S&P 500: Total return — 171 percent; Max DD — 39 percent (current); Longest flat — 22 months (current).
Nasdaq: Total return — 391 percent; Max DD — 77.5 percent (current); Longest flat — 22 months (current).

DRAWDOWN CURVE



System analysis:

The risk-reward relationships for this system are excellent. The drawdown figures (maximum drawdown of only 9 percent, for example) are very low. And the drawdown was worst early in the testing period, before the system had picked up speed.

The low drawdown and short flat times indicate the system works well in all market conditions, continuously grinding out small profits. Remember also that this system does not sell short. It is likely that a short-side version of the system would lower the volatility of the equity curve.

However, just because the system works very well at all times doesn't mean it is free from flaws and that all trades will be winners. In this case the winning percentage is 55 percent, which is good. It could be increased by substituting the rather tight stop-loss with a looser one, although it is not certain that would be desirable. Fewer losing trades would translate into larger losing trades and more volatility.

Another way to improve this system could be to add a trend filter, such as a long-term moving average, and only trade in the direction of the trend. The disadvantage of doing this is that all the stocks you're trading would probably make and lose money at approximately the same time, which would increase the system's volatility. Adding a trend filter also would decrease the already low trading frequency, which in turn would slow the equity growth.

The conclusion, therefore, is that this is a very well-balanced system that doesn't need additional filters. The number of profitable trades probably could be increased further, but that would most likely also hurt the bottom line.

STRATEGY SUMMARY

Profitability		Trade statistics		
End. equity ($):	612,547	No. trades:		873
Total return (%):	513	Avg. trade ($):		587
Avg. annual ret. (%):	20.83	Avg. DIT:		5.2
Profit factor:	1.77	Avg. win/loss ($):	2,552	(1,706)
Avg. tied cap (%):	19	Lrg. win/loss ($):	16,704	(11,571)
Win. months (%):	72	Win. trades (%):		55.9
Drawdown		TIM (%):	79	5.6
Max. DD (%):	9.1	Tr./Mark./Year:		3.0
Longest flat (m):	12.3	Tr./Month:		7.6

LEGEND: End. equity ($) — *equity at the end of test period* • Total return (%) — *total percentage return over test period* • Avg. annual ret. (%) — *average continuously compounded annual return* • Profit factor — *gross profit/gross loss* • Avg. tied cap (%) — *average percent of total available capital tied up in open positions* • Win. months (%) — *percentage profitable months over test period* • Max. DD (%) — *maximum drop in equity* • Longest flat — *longest period, in months, spent between two equity highs* • No. trades — *number of trades* • Avg. trade ($) — *amount won or lost by the average trade* • Avg. DIT — *average days in trade* • Avg. win/loss ($) — *average wining and losing trade, respectively* • Lrg. win/loss ($) — *largest wining and losing trade, respectively* • Win. trades (%) — *percent winning trades* • TIM (%) — *amount of time there is at least one open position for entire portfolio, and each market, respectively* • Tr./Mark./Year — *trades per market per year* • Tr./Month — *trades per month for all markets*

ROLLING TIME WINDOW RETURN ANALYSIS

Cumulative	12 months	24 months	36 months	48 months	60 months
Most recent:	15.33%	40.40%	97.33%	158.44%	283.38%
Average:	23.54%	56.37%	102.40%	157.51%	235.39%
Best:	61.12%	97.13%	174.51%	250.84%	345.54%
Worst:	-6.64%	-3.25%	16.38%	37.05%	109.32%
St. dev.:	16.78%	28.96%	45.17%	61.11%	76.20%
Annualized	**12 months**	**24 months**	**36 months**	**48 months**	**60 months**
Most recent:	15.33%	18.49%	25.43%	26.79%	30.84%
Average:	23.54%	25.05%	26.49%	26.68%	27.38%
Best:	61.12%	40.40%	40.02%	36.86%	34.83%
Worst:	-6.64%	-1.64%	5.19%	8.20%	15.92%
St. dev:	16.78%	13.56%	13.23%	12.66%	12.00%

LEGEND: *Cumulative returns* — Most recent: *most recent return from start to end of the respective periods* • Average: *the average of all cumulative returns from start to end of the respective periods* • Best: *the best of all cumulative returns from start to end of the respective periods* • Worst: *the worst of all cumulative returns from start to end of the respective periods* • St. dev: *the standard deviation of all cumulative returns from start to end of the respective periods*

Annualized returns — The ending equity as a result of the cumulative returns, raised by 1/n, where n is the respective period in number of years

Send *Active Trader* your systems

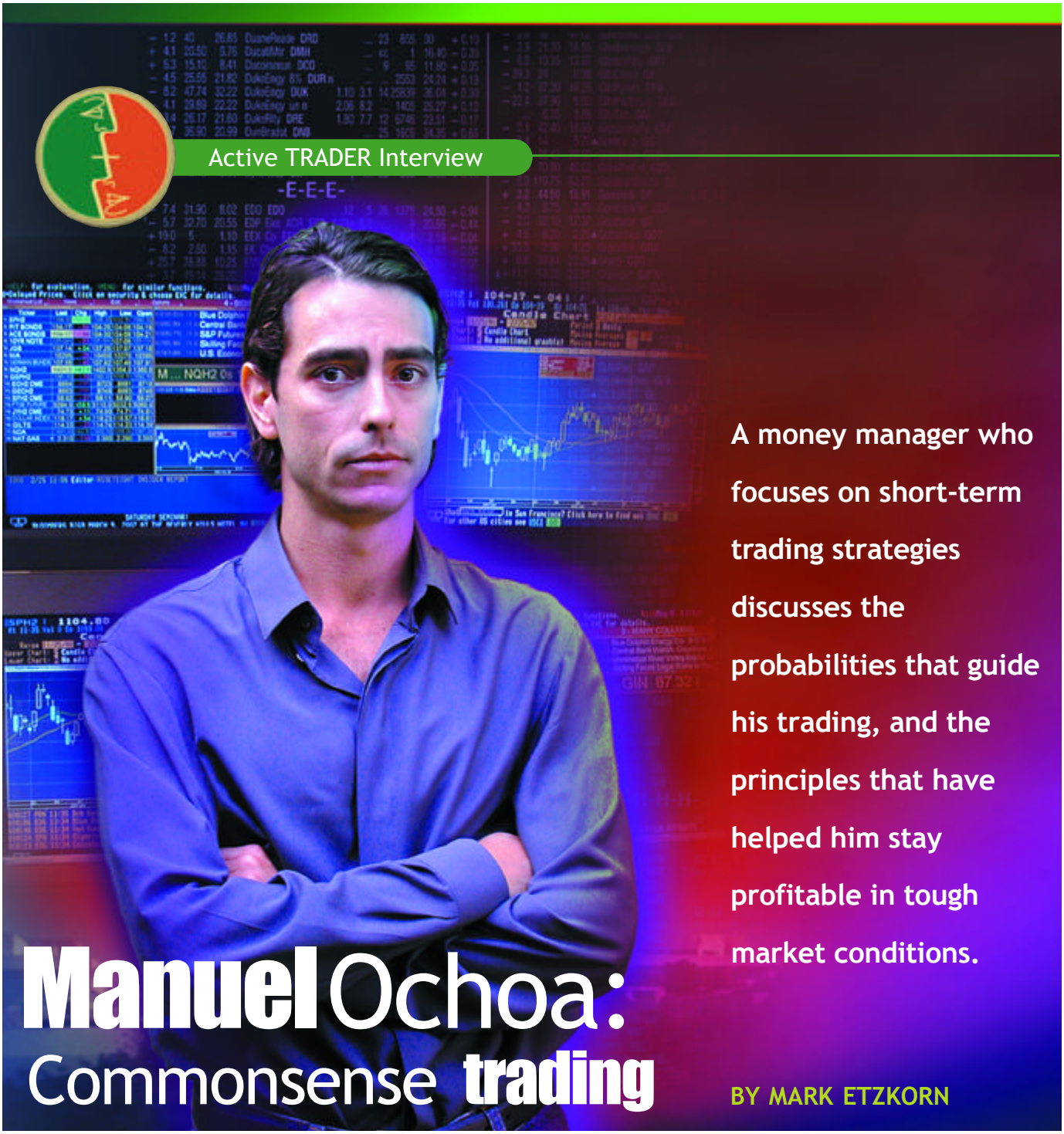
If you have a trading system or idea you'd like tested, send it to us at the Trading System Lab. We'll test it on a portfolio of stocks or futures (for now, maximum 60 markets, using the last 2,500 trading days), using true portfolio analysis/optimization.

Most system-testing software only allows you to test one market at a time. Our system-testing technique lets all markets share the same account and is based on the interaction within the portfolio as a whole.

Start by e-mailing system logic (in TradeStation's EasyLanguage or in an Excel spreadsheet) and a short description to editorial@activetradermag.com, and we'll get back to you.

Note: Each system must have a clearly defined stop-loss level and a suggested optimal amount *to risk* per trade.

Disclaimer: The Trading System Lab is intended for educational purposes only to provide a perspective on different market concepts. It is not meant to recommend or promote any trading system or approach. Traders are advised to do their own research and testing to determine the validity of a trading idea. Past performance does not guarantee future results; historical testing may not reflect a system's behavior in real-time trading.



Active TRADER Interview

Manuel Ochoa: Commonsense trading

A money manager who focuses on short-term trading strategies discusses the probabilities that guide his trading, and the principles that have helped him stay profitable in tough market conditions.

BY MARK ETZKORN

Maybe it's a Southern California thing, but trader Manuel Ochoa — born, raised and educated in sunny Los Angeles — doesn't seem to get too stressed about trading. Unlike some traders who will only talk to you after the closing bell, Ochoa is often willing to have a conversation during market hours, a possible benefit of his mostly systematic trading approach.

On a day-to-day basis, I don't get too worked up," the 33-year-old hedge fund manager says. "There are times, maybe once or twice a year, when there is extreme price movement — like Sept. 21, when the market re-opened after the World Trade Center attack — and things are really stressful.

"But you kind of get accustomed to the markets and handling stress," he continues. "If you're really nervous from day-to-day, it's probably a symptom of being overleveraged."

Avoiding excessive leverage is just one of the "obvious" ideas on which Ochoa bases his trading. He registers surprise at how little research many traders perform, and he emphasizes how much they can gain from simple statistics, such as determining the probabilities of whether the market is currently in a trending phase. To him, such concepts are the real engines that drive profitability; specific entry techniques or indicators are just fuel additives.

His perspective has allowed him to hold no other job in his

adult life besides trader. Trading for himself since 1993 and managing money since 1995, Ochoa is currently head of a Santa Monica-based hedge fund that specializes in shorter-term trading strategies.

Ochoa began exploring the markets while majoring in international finance at the University of Southern California. He first started thinking about it while taking courses in macroeconomics and exchange rates, and he spent much of his spare time researching markets. As luck would have it, USC had a state-of-the-art financial computer lab, and Ochoa took full advantage of the software and other tools at his disposal. He performed auto-correlation studies on interest rates and currency markets — that is, determining their trend characteristics on different time frames.

His professors weren't his only teachers — Ochoa got schooled by the market as well. In 1990, he began trading currency futures on a short-term basis from his dorm room, taking positions that typically lasted two days to two weeks. He based his trades on price (measuring volatility based on the daily range) and interest rate differentials between the countries of the currencies he was trading — for example, selling the Swiss franc vs. the U.S. dollar if interest rates were higher in the U.S. than in Switzerland.

It took him all of three months to blow out his trading account. And to add insult to injury, the episode caught him completely off guard.

"I was so dumb, I didn't even know [what had happened]," he recalls. "I got a call after there was a huge overnight move that stopped me out of everything. Then I reversed my position — and the market turned right back around the other way.

"My broker called me up around 5 a.m. and told me my account had a negative $2,000 balance. I was totally caught by surprise. All I remember is that while this was happening, my dorm roommate was throwing pillows at the back of my head and yelling at me to turn the lights off."

There has to be a theme to a trading approach or strategy — a logical foundation that underlies a technique.

Although he can laugh about the debacle now, he didn't make another trade for almost two years. But he did continue his research after graduation, trying to better understand the markets and develop trading techniques and systems based on his findings. He didn't hit pay dirt immediately, but he had a feeling he would find something that worked.

"I knew you could make money, because I saw other people doing it," he says. "And there was money to be made because the markets were moving a lot; if you could just catch the right side, it was quite an opportunity. I knew there was something out there. It was elusive at first, but I spent the next two years developing techniques to reach that goal."

Once he started trading again, he was profitable virtually from the start. He launched his money management career in 1995, and has been running his current hedge fund since 1996. In the succeeding five years, Ochoa has racked up an average annual return of 16.51 percent, and a total return of 169.27 percent. Through January 2002, he has been profitable 35 out of 72 months (49 percent), and he has had no losing years. In the midst of a bear market, he posted returns of 23.39 percent in 2000 and 2.92 in 2001. All these figures represent net profits after the deduction of fees. His performance is shown in Figure 1.

Even better, from a money management perspective, Ochoa had his worst drawdown (around 25 percent) in his first two years of managing money; since that drawdown, in 1996, he has never had a drawdown greater than 12 percent.

Ochoa believes it is important to know what works in the markets, but far more valuable to know what does *not* work.

"People talk about so many things in terms of the markets, and most of it is just b.s.," he says. "The most important thing for a trader who is starting out is to falsify all the garbage out there — weed out all the junk — because there's more of that than practical knowledge."

Ochoa advocates diversification; he trades both futures (interest rates, currencies and stock indices) and index tracking stocks such as the Spiders (SPY) and Diamonds (DIA). Many of the ideas he believes in, he says, are just a matter of simple logic, and stem from the analysis he began in college and the experience he accumulated afterward.

AT: ***At the end of your research period, what conclusions had you come to about the markets and how you were going to trade?***
MO: I just realized the importance of having common sense — understanding exactly what you're doing and why it works. A lot of people use back-testing programs to develop technical systems that look good on paper but have no underlying logic. There has to be a theme to a trading approach or strategy — a logical foundation that underlies a technique.

AT: ***What were some of the themes you discovered?***
MO: That the markets are constantly moving around in a process of price discovery. Markets move to new levels— to numbers and statistics that haven't been published yet. Everybody already knows about fundamental things like interest rate differentials, so they really don't matter as much. Fundamentals aren't as important as you're taught in macroeconomics.

AT: ***What are some of the market concepts or trading ideas you "weeded out," as you said earlier?***
MO: First, the mistake of overdoing leverage. When they're starting out, most traders use way too much leverage. They have dreams of making 50 percent every year, but they don't understand the drawdown associated with that is more than they can handle.

Second, most traders place their stops too tightly and they get taken out of the market by random price movement. It's a trade-off. You have to be able to accept a certain level of risk to stay in a trade. Usually, excessively tight stops are a symptom

of using too much leverage.

Another thing I learned was that most indicators are worthless. If you're a technical trader, everything boils down to one thing: If you can ascertain the two states of the market — trending or not trending — you're 80 percent of the way there. If you can get that right even just two-thirds of the time, you'll be a successful trader.

AT: ***That's interesting, because some people might hear that and say, "Well, that's not so hard to do: Look, that market is above its 50-day moving average — it's in an uptrend." What's the catch?***

MO: The catch is that the market is constantly switching between those phases and you have to ascertain the probabilities of what the next day or week will hold. In other words, is there a two-thirds chance the market is in a trending phase right now, or not? That's what you have to determine.

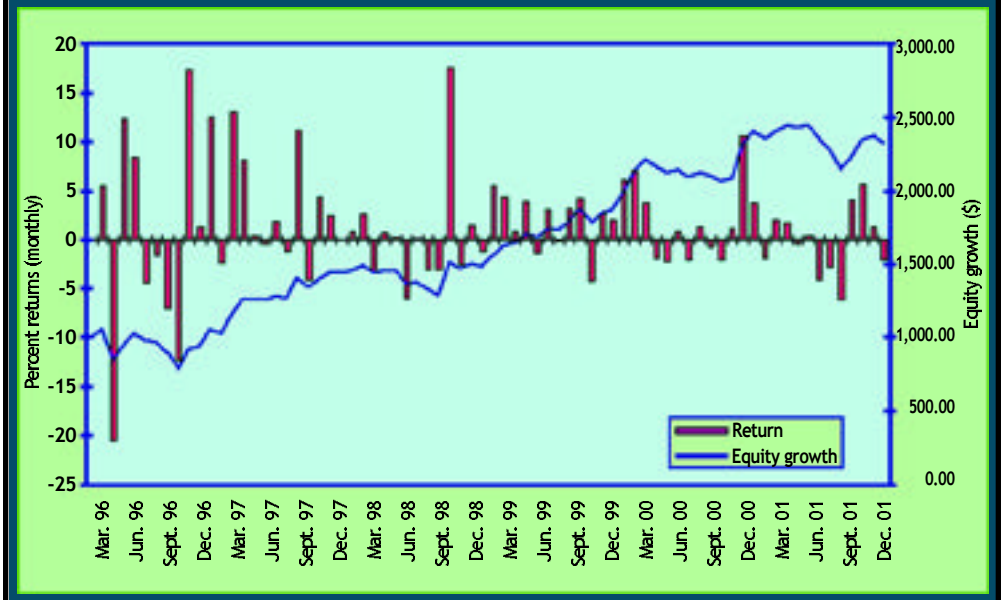
When you get to the bottom of that issue, everything else falls into place. For example, if you know the market is trending, then you know which tools to use. If you have a 75-percent confidence level the market is not trending, you won't waste your time with tools that are suited for trending conditions.

Also, if you're going to be a professional trader, you have to trade more than one market. If you don't, you're limiting yourself — you're only playing with a couple of pieces of the entire puzzle.

When you trade different markets, everything starts coming together and you see how markets move in relation to each other. If the bonds are up big one day, there's a good chance the S&Ps will be up or down big, too — things like that. Experience in one market enhances your understanding of others. Rather than focusing on one market, a little more effort in the diversification area will give you a lot of bang.

FIGURE 1 MANUEL OCHOA: JANUARY 1996 THROUGH JANUARY 2002

The red bars represent Manuel Ochoa's monthly returns, and the blue line represents the value of a $1,000 account over the trading period. Since 1996, Ochoa has generated a nearly 170 percent cumulative return. His worst drawdown since 1996 has been 12 percent, and his monthly returns highlight his steadily decreasing drawdowns. He posted returns of 23.39 and 2.92 percent in 2000 and 2001, respectively.



Cumulative return	169.27%	Worst drawdown	-25.76%
Average annual return	16.51%	Best run-up	45.13%
Average gain in a positive month	5.17%		

Data source: Zurich Capital Management

AT: ***How long are your typical trades?***

MO: One day to three weeks. The average trade is probably two or three days.

AT: ***Are you a systematic trader?***

MO: Yes, for the most part.

AT: ***Where does discretion come in?***

MO: It comes in more in the way I apply my systems. Even if you're a systematic trader, you have to make some discretionary decisions about how to apply the different systems you're using.

On a macro level you have to decide which systems you're going to employ based on market conditions. For example, you may have two systems that are basically designed to do the same thing. Which one do you use in a given situation? On a micro level, you might have to decide how big the trade is going to be. There's no such thing as just plugging in a system and that's it — you just call in your orders from the beach.

As time goes on, system degradation becomes the primary issue in trading. You have to use discretion to detect when your systems are degrading — when they're losing their edge in the market.

If you can ascertain just two-thirds of the time whether the market is trending or not trending, you'll be a successful trader.

AT: ***How do you know with certainty this is happening?***
MO: Well, when your system simply doesn't do what it's designed to do, or it doesn't do it to the degree it should — for example, if you're using a trend-following system and the market makes a big move but you don't make any money, or you only pull out 10 percent of the move. The first warning flag of degradation is when your system does less than it should.

AT: ***Is money management an independent topic, or is it part of a system to you?***
MO: It's part of the system. The only separate money management rule is the use of hard-money stop-out points, where it doesn't matter what the system says — you get out because you've reached a maximum-loss level. That's not based on the market. It's a safety valve.

AT: ***How much of your equity do you risk on a trade?***
MO: The average risk is 2 percent.

AT: ***After you get an initial signal, will you increase the position size, or do you go in all at once?***
MO: I'll add on to positions sometimes. It varies. One example might be if one of my systems gives me a signal and then another system or systems give signals in the same direction.

AT: ***Do you use trailing stops and profit targets to exit positions?***
MO: Yes, both. These days, if I had the choice of being better at getting into trades or getting out of them, I'd definitely want to improve my exits. Everybody sees the same trends develop. The guys who make the most money are the ones who get out before everyone else.

Average traders give too much of their profit back, especially trend followers. The average trend follower only captures 40 to 50 percent of a move, which is pathetic.

I've seen too many people blow up. It's better to err on the side of being underleveraged than overleveraged.

AT: ***But doesn't the fact that they're usually capturing large moves — relative to short-term traders — and paying lower commissions make up for that?***
MO: Yes, it does, but to the same extent it did 10 years ago? Absolutely not. It's just not the same game it used to be in the 1970s and 1980s when commodities and technical trading were taking off. A lot of people keep saying, "Just wait until inflation comes back," but because things are more competitive now and more traders are fighting for market share, it probably won't ever work as well as it used to.

AT: ***Do you think there's a better way to follow trends, or is the approach itself doomed, so to speak?***
MO: The trend-following concept is still valid to a certain extent, but the approach has degraded to a noticeable degree, to the point that, for me, there are better ways to trade.

Trading is an industry like any other, and it has efficiencies. It's so easy to be a trend follower now — all you have to do is buy software and it will have canned trend-following systems in it. There are absolutely no barriers to entry any more. When something reaches a critical level like that, it just can't work as well.

AT: ***What's your basic trading approach, then?***
MO: It's pretty straightforward, really. Like I mentioned before, the key is to do some kind of analysis that allows you to determine with a certain degree of confidence if a market is due for more trending price action or non-trending price action.

It's really similar to a process of creating actuarial tables — that's the closest comparison I can think of. You study historical price data and determine the possible outcomes of different scenarios — say, the market has rallied x percent over the last five days, what are the odds it will do this or that over the next several days or weeks? You'd be surprised how many people don't do this kind of analysis.

But once you've done that, you can use very simple tools. I use moving averages, which are very simple but still allow you to stay on the right side of the market when it's trending.

AT: ***Let's take a simple example: Say you've determined — based on the type of analysis you're talking about — the market is currently in a downtrend, and you're flat. Then***

the market has two back-to-back inside days. If the market breaks out of the downside of the range of this consolidation, would that be a signal to go short?
MO: Yes, that kind of idea — a consolidation breakout, a volatility breakout — would be a decent example. Markets are constantly shifting from equilibrium to disequilibrium. When a market has been in equilibrium for a while — like it would be in a consolidation — the odds that some piece of information will come into the market and cause a price adjustment start to increase.

AT: ***How often do you have to update your research to reflect changes in market conditions?***
MO: I re-evaluate everything a couple of times per year.

You have to be very careful about optimization because software makes it so easy to fall into the trap of clicking a few buttons, changing some variables and producing "great" results.

AT: ***The most common figure I've seen referenced is that your average winner should be at least twice the size of your average loser. Do you think that's unrealistic?***
MO: In terms of your average winner vs. your average loser over time, yes. Any individual trade can be very big or very small, but I've never known or heard of anyone managing client money who averaged more than $1.30 for every dollar lost over a long period of time. And 2 to 1 or 3 to 1 is unheard of.

If I had the choice of being better at getting into trades or getting out of them, I'd definitely want to be better at getting out of them.

AT: ***Is your profitability based more on having a high percentage of winning trades, or having winning trades that are much larger than your losing trades?***
MO: It's really a blend. You need to have both things going — mixing strategies that do one or the other. If you only use one strategy, say, just having more winners than losers, every once in a while you get whacked — you'll take a big loss.
AT: ***Do you think there are any minimum thresholds for these aspects of trading?***
MO: A momentum or trend system, regardless of time frame, should have 40 percent winning trades to be considered effective.

AT: ***What about the size of winners vs. losers?***
MO: In terms of managing money professionally, you should be able to make at least $1.20 for every dollar lost. And that's assuming you haven't been optimizing.

AT: ***How many systems do you work with?***
MO: Around a half-dozen.

AT: ***Have you had systems that have stopped working, or stopped working and then started working again?***
MO: Yes.

AT: ***Do you still research and test different trading strategies, or are you more just streamlining the ones you have?***
MO: You always have to keep researching, keep reading, stay on top of new developments. The markets and the trading industry are always evolving, and it pays to stay on top of the cutting edge work being done regarding how markets work.

For example, there's a group of professors at the University of Chicago doing work in an area called behavioral finance. It basically runs counter to the efficient market hypothesis and shows how psychology influences the markets — despite the

fact that market participants are supposed to be rational.

AT: ***But doesn't the fact that you've already been a professional trader for several years imply that you didn't need anyone to disprove the random walk theory for you? If you believed in it, you wouldn't be trading, right?***
MO: No, because the random walk theory has only been tested on stock market averages, not on commodity markets. I think if you pinned down any academic and asked them, "Does the random walk apply to commodity markets?" you might get a different answer.

But they're hesitant to introduce the possibility of auto-correlation (non-random trending) in markets. But anyone who's seen auto-correlation studies for markets such as crude oil and coffee, for example, knows there's no debate. But because of the studies done on the stock market, people naturally assume all markets must have a high level of efficiency, and that's not true at all.

So you have to keep up on the latest debates and ideas, because they show you how things evolve in the markets, on a high level.

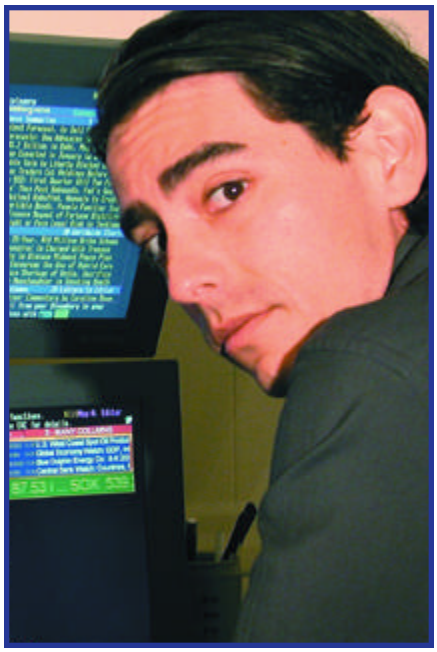
AT: ***The stock market has certainly changed — in a broad sense — since you started managing money. What was 2001 like for you?***
MO: I was up about 2 percent [2.92 percent] on the year. It was my slowest year since 1998. After you've been trading a while, you realize you have some big years, and others where you're basically flat. The real challenge is to avoid down years. If you can trade every year and never have a losing year, you're going to do all right.

That's another thing: People are really too short-term oriented in terms of their trading performance. You really have to look at your trading in the context of years. To tell yourself you have to be profitable every week puts unnecessary weight on your shoulders. The market is very random in the short-term, so you're subjecting yourself to needless torture. The most frequently you should look at your performance is semi-annually.

AT: ***Have you had to use different systems, or use your systems in a different way, to adjust to bear market conditions?***
MO: Because the uptrending, momentum environment in stocks is over for now, you have to be more nimble in terms of exiting trades. In this type of market, the average profit per trade has shrunk. That's just a fact — there no longer are the same kinds of big moves we all saw before; you can only take so much out of the market.

But there's no fundamental difference between now and a couple of years ago. I'm still using the same systems — nothing has changed in that respect. That's the result of using a very unoptimized trading approach.

When you first start trading, you're overconfident and you overestimate your abilities. You've yet to be humbled by the market.



AT: ***How long did it take you to gain a perspective on the market and learn the lessons you've been talking about?***
MO: It took a while. When you first start trading, you're overconfident and you overestimate your abilities because you've yet to be humbled by the market.

But you have to remember that the markets have so many smart people in them — it's extremely competitive and information flows very fast. You have to respect it.

AT: ***So what do you think allows you to stay in the game? What's your edge?***
MO: I have a long-term perspective… and extreme paranoia (*he laughs*). What I really mean is that I have a healthy respect for the market, and I pay close attention to risk.

And experience, obviously, is helpful — knowing what other guys are doing. You know, on average, the really big managers are only making 15 to 20 percent annually. There are exceptions, but that gives you an idea of what you're in for if you're managing money.

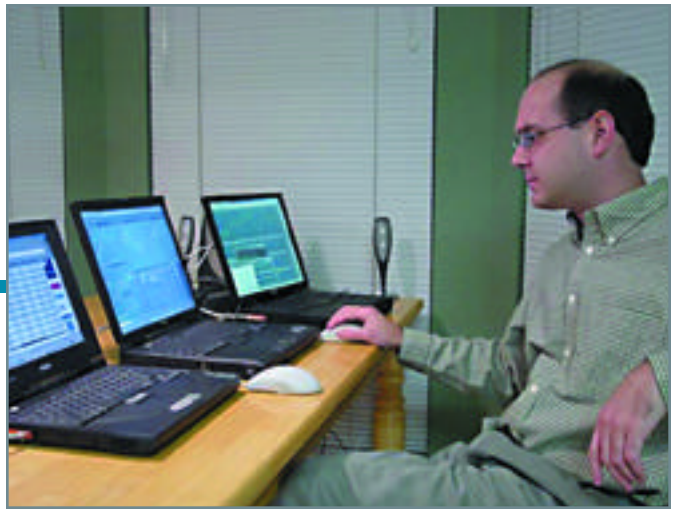
AT: ***What's your worst drawdown?***
MO: My drawdowns were much bigger when I started, but as I became more seasoned they got smaller and smaller. I had a 25-percent drawdown in 1996, but in the last five years I've cut it in half to 10 to 12 percent.

AT: ***Is that improvement a function of the discretionary elements we talked about before?***
MO: It's that, plus experience and system ideas. I'm really a pretty conservative trader — I don't use a lot of leverage. If I were more aggressive, I could justify using 50 percent more leverage. But I've seen too many people blow up. I'm a moderate risk taker. It's better to err on the side of being underleveraged than overleveraged.

See www.activetradermag.com for more of this interview.

Focusing on Forex

BY KIARA ASHANTI



Name: Brian Dalton
Age: 33
Lives in: Mansfield, Texas

As the bull market began to fade in early 2000, Brian Dalton didn't panic. He migrated from stocks to options to currencies. This Lone Star state trader likes the leverage and easy access of the 24-hour global Forex market.

Dalton, who has a bachelor's degree in music from Baylor University and a master's in organizational management from the University of Phoenix, is president of a food manufacturing company (www.bestmaidproducts.com) in Fort Worth, Texas.

"I'm pretty busy with work, but I'm constantly aware of the market." he says. "I'm somewhat obsessed. I just love it."

Worst trading experience: "Probably when I lost several thousanddollars on a single trade in two days. After that loss I felt paralyzed and unable to trade at all. Of course I'm glad I sold that position and took the loss because today that stock is not even a going concern.

"I think I was at a disadvantage when I started trading in 1998 because I had initial success with the popular tech stocks of the day — Network Solutions, Real Networks, AOL and Yahoo. It made it seem like it was easy to make money, and I found out it wasn't.

"I slowly migrated to options and then to spot Forex [currency trading], which is the ultimate market for junkies like me. It's open 24 hours a day, and you have incredible leverage."

The most important lesson I've learned: "Have a trading plan. The markets are psychologically motivated. Risk has a reward component, so I like to use it when the odds are in my favor. Also, I think it's important to focus on being right more than on absolute dollar wins and losses.

"And make sure you have fun. The goal, of course, is to make a profit. But if you don't enjoy this business, you won't be profitable, anyway."

Trading methodology: "Probably the best way to classify me is as a flexible trend trader. I might day trade or I might hold a position for weeks. I follow price trends, but if I end up with a fast profit I generally take it.

"Because I primarily trade Forex I tend to rely on price exclusively. There are indicators galore, but to me very few do anything other than show price in a different form. I firmly believe Fibonacci retracements and Fibonacci sequences are applicable. I am also currently experimenting with Neural Nets.

"I use a combination of quantitative methodologies that I supplement with Elliott Wave analysis. I develop support and resistance zones using common Fibonacci numbers where price can be expected to congest.

"I also use weekly data to calculate the same information for a slightly longer-term perspective that is then framed by my Elliott Wave analysis, which consists of studying chart patterns and interpreting the position of price within larger waves."

When I'm not trading, I'm: "jogging, reading, and going to the movies or playing games. I'm happily married to my high school sweetheart, Mary Bess, and we have two spoiled cats."

The best thing about trading: "is the freedom to practice capitalism on a more personal level than anywhere else by trading equities, options, and Forex online in real-time. I find it quite liberating also to be in touch with the world markets from my very small corner of the world."

Trading setup

Hardware:	1.2Ghz laptop PC, 512MB RAM. 15-inch screen (primary computer); 1.7Ghz server, 512MB RAM, 17-inch flat panel monitor; 366Mhz laptop PC, 256MB RAM, 15-inch screen; and an 800Mhz PC, 256MB RAM, 12-inch screen.
Internet connection:	Cable modem (Connection jacks located throughout his home are routed via hubs to a Netgear router, which the cable modem plugs into. He uses the server primarily to backup data.)
Brokerage:	GAIN Capital (spot Forex firm)

Looking for a TARGET

Wouldn't it be great to know when to get out of a trade before you begin to give profits back to the market? By analyzing a trading system's characteristics, you can determine profit targets that result in more consistent and robust performance.

BY THOMAS STRIDSMAN

When implementing risk control and money management techniques, you must look at how the different elements — stop placement, trade length and position size, for example — interact. If you look at each of them in isolation, you only get part of the picture.

In "Balancing stop size and trade length" (*Active Trader*, April 2002, p. 66), we discussed how to combine the best stop-loss level with the most appropriate trade length. In these tests, the trade length functioned as a default profit target. This time, we'll look at how to integrate an independent price target into a mechanical system, and how to balance it with the system's other risk parameters.

System refresher

The system we tested last month, and which we will use again, is a very simple swing-trading pattern that goes long when the market is about to move away from a short-term bottom and goes short when the market is about to move away from a short-term top. (This system is intended for demonstration purposes only; it is useful because it generates plenty of trade signals to study. We do not recommend that you trade this pattern without doing your own research.)

The strategy goes long today if the following criteria are met (reverse the rules for short trades):

1. the market breaks above yesterday's high;
2. yesterday's close was lower than yesterday's open; and
3. yesterday's high was below the high two days prior to yesterday.

To analyze all the trade signals — not just the first in a series of signals in the same direction — we added a random number generator (RNG) that assigns each entry point a one (take the trade) or a zero (don't take the trade).

Our method was to run the system 1,000 times on the same basket of 30 Nasdaq stocks, altering either the trade

Programming code

```
Inputs: BarsInTrade(0), ProfitExit(0), LossExit(0);
Variables: EntryTrigger(0), LongStop(0), ShortStop(0), LongTarget(0),
          ShortTarget(0), LimitExit(0), StopExit(0);
EntryTrigger = IntPortion(Random(2));
LimitExit = (ProfitExit / 2 + 0.5) / 100;
StopExit = (LossExit / 5 + 0.2) / 100;
If EntryTrigger = 1 and MarketPosition = 0 Then Begin
       If High < High[2] and Close < Open and Open Next Bar < High Then Begin
                Buy Next Bar at High Stop;
                LongStop = 1 - StopExit;
                LongTarget = 1 + LimitExit;
       End;
       If Low > Low[2] and Close > Open and Open Next Bar > Low Then Begin
                Sell Next Bar at Low Stop;
                ShortStop = 1 + StopExit;
                ShortTarget = 1 - LimitExit;
       End;
End;
If MarketPosition = 1 Then Begin
       ExitLong Next Bar at EntryPrice * LongStop Stop;
       ExitLong Next Bar at EntryPrice * LongTarget Limit;
End;
If MarketPosition = -1 Then Begin
       ExitShort Next Bar at EntryPrice * ShortStop Stop;
       ExitShort Next Bar at EntryPrice * ShortTarget Limit;
End;
If BarsSinceEntry = BarsInTrade+1 Then Begin
       ExitLong Next Bar at Market;
       ExitShort Next Bar at Market;
End;

Variables: NoTrades(0), MarPos(0), TrProfit(0), SumTrProfit(0), AvgTrade(0),
          TestString(""), FileString("");

NoTrades = TotalTrades;
MarPos = MarketPosition;
If NoTrades > NoTrades[1] Then Begin
       If MarPos[1] = 1 Then
                TrProfit = (ExitPrice(1) - EntryPrice(1)) * 100 / EntryPrice(1);
       If MarPos[1] = -1 Then
                TrProfit = (EntryPrice(1) - ExitPrice(1)) * 100 / EntryPrice(1);
       SumTrProfit = SumTrProfit + TrProfit;
End;

If LastCalcDate = Date + 2 Then Begin
       AvgTrade = SumTrProfit / NoTrades;
       TestString = LeftStr(GetSymbolName, 5) + "," + NumToStr(BarsInTrade+1,
                    2) + "," + NumToStr(LimitExit*100, 2) + "," +
       NumToStr(StopExit*100, 2) + "," + NumToStr(AvgTrade, 2) + NewLine;
       FileString = "D:\Temp\StopTest-" + RightStr(NumToStr(CurrentDate, 0),
                     4) + ".csv";
       FileAppend(FileString, TestString);
End;
```

This code can be copied from www.activetradermag.com/code.htm.

length or the stop-loss level every 10th run. The trade length was altered between one and 10 days in one-day increments, and the stop-loss level between 0.2 and 2 percent in 0.2-percent increments. Because of the RNG, each test run through a specific market produced a unique set of trades, even if the trade length and stop-loss settings remained the same.

For the tests in this article, we will also test profit targets from .5 to 5 percent, in .5-percent increments.

A variation of the TradeStation code prepared for this month's research can be found in "Programming code" (right).

A matter of confidence

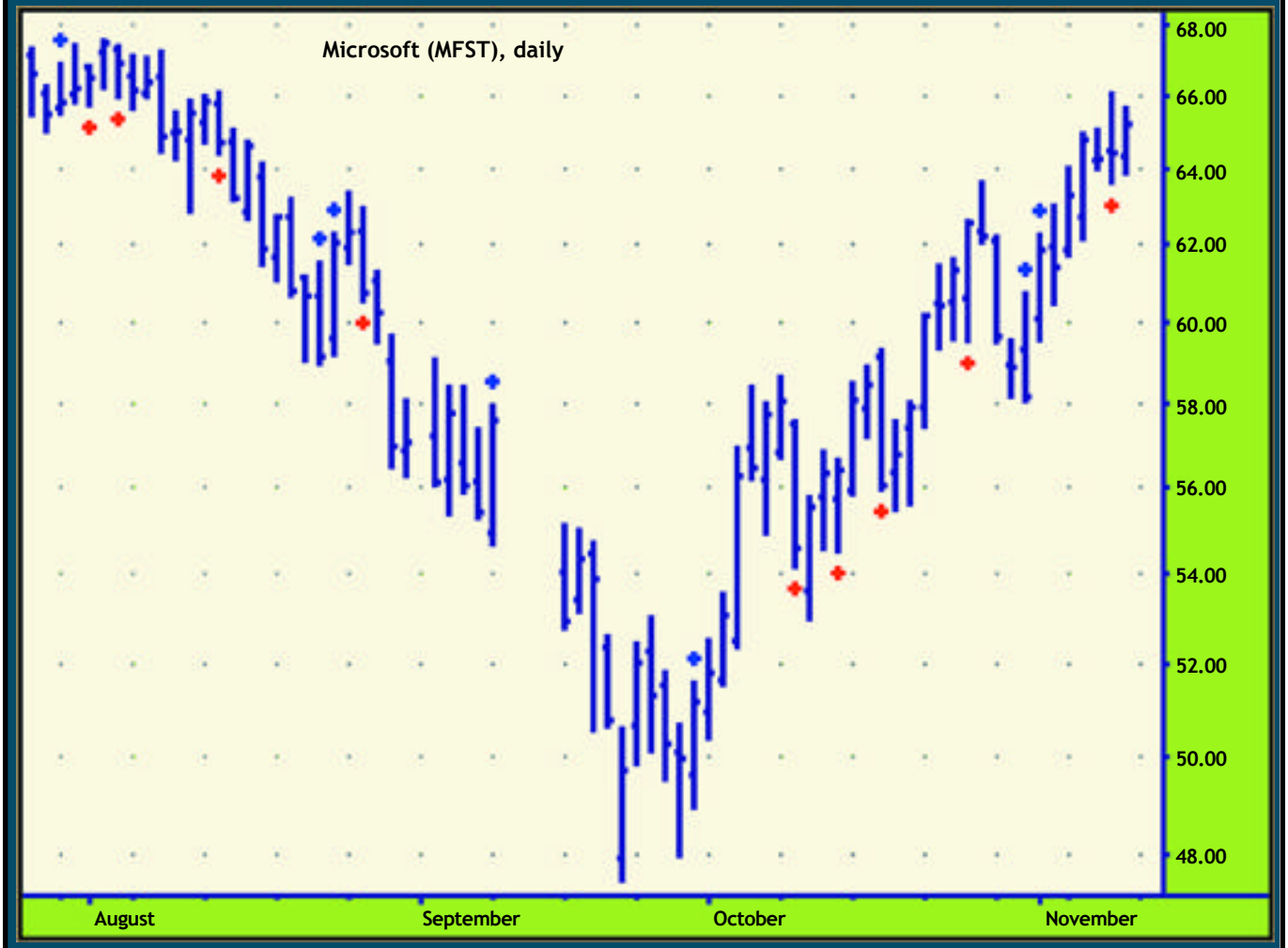
Typical system-testing routines test only the first signal in series of entry signals. For example, after a system generates a buy signal, it may generate another buy signal two days later. This second signal is ignored, however, because the test is structured to overlook additional signals in the same direction and instead act only on a signal in the opposite direction.

Testing all trade signals gives you a more in-depth perspective on your system's characteristics, and will ensure that you can trust the second and third signals in a series as much as the initial signal. Figure 1 shows a chart of all signals the system generated in Microsoft in fall 2001. There are several instances of consecutive signals.

Consider the following situation: How many times have you seen a nice setup forming and have readied yourself to place the trade if price reached a certain level? Have all these situations resulted in trades? Probably not. The next day, the market takes off in the anticipated direction, leaving you behind. Late in the day you actually get the signal you were looking for the previous day. With the market already having made a substantial move in the anticipated direction, do you trust your system enough to take the trade now? Only a complete test of all signals will give you that confidence.

FIGURE 1 **MULTIPLE SIGNALS**

A strategy often produces several consecutive signals in the same direction. By default, most system-testing programs ignore signals that come after the initial signal in a series. To gain a better understanding of and confidence in a trad - ing system it's necessary to analyze all trade signals.



Source: TradeStation Platform by TradeStation Group. Data: Unfair Advantage, by CSI data

Time and profit targets

Ultimately, price moves are triggered by news and fundamentals. The move can be traded and monitored, but as more news hits the market — or simply as time passes — the news that generated your entry signal becomes increasingly irrelevant. Eventually, it has no significance at all, which means the reason for you to be in the trade also has vanished.

This is why it's important to find the optimal trade length — it will give you a concrete idea when the reasons for being in a trade are no longer valid.

However, there are reasons to exit a profitable trade before the optimal trade length is reached. Perhaps the market moved more than expected. When that happens, a pullback probably isn't too far away. If and when it comes, the market has not only discounted the event that triggered your trade, it also has acknowledged that it was overly optimistic or pessimistic about it and needs to retrace a bit of that move.

It would be great to know at what profit level you should bail out before you begin to give profits back to the market. That's what we'll look at next.

Analyzing the results

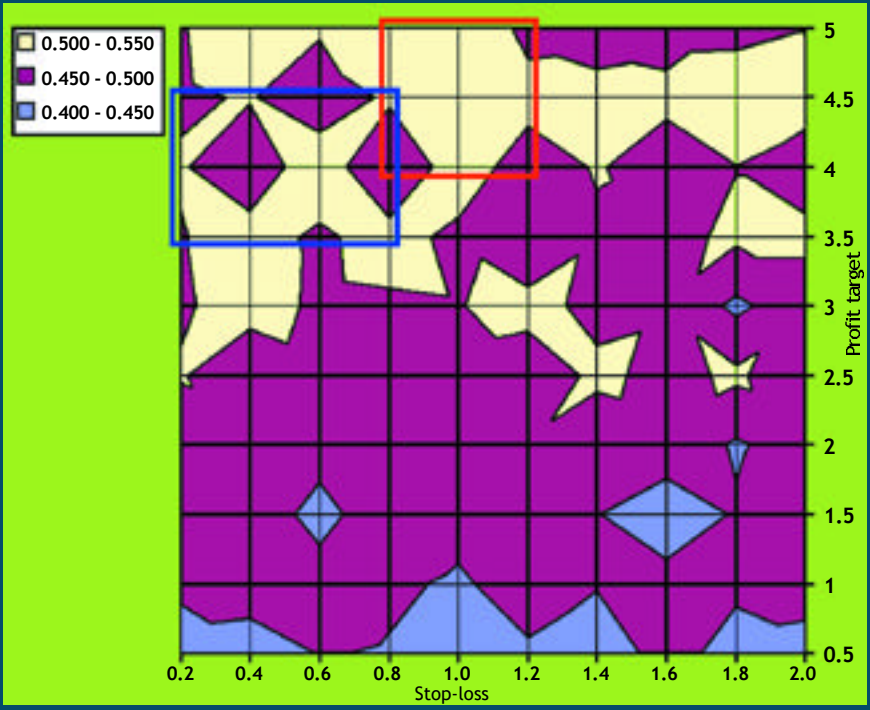
After testing the system in TradeStation, the results can be exported to a text file (the bottom part of the code does this). From there, you can use Excel to produce surface charts, such as the ones in Figures 2 through 4.

When reading a surface chart, you should look for large, preferably uninterrupted areas of the same color that represent as high a value as possible. This way, you'll make sure that the system works not only on the system parameters represented by the exact intersection of the horizontal and vertical lines, but also on other adjacent combinations. This gives room for error if market conditions change. (For more on surface charts, see last month's article, "Balancing stop size and position length.")

You can compare a surface map to a weather map. If various pressure systems, represented by different colors, are too close together on the map, it produces very unstable weather conditions. Likewise, if different colors on the sur-

FIGURE 2 TARGET VS. STOP LOSS

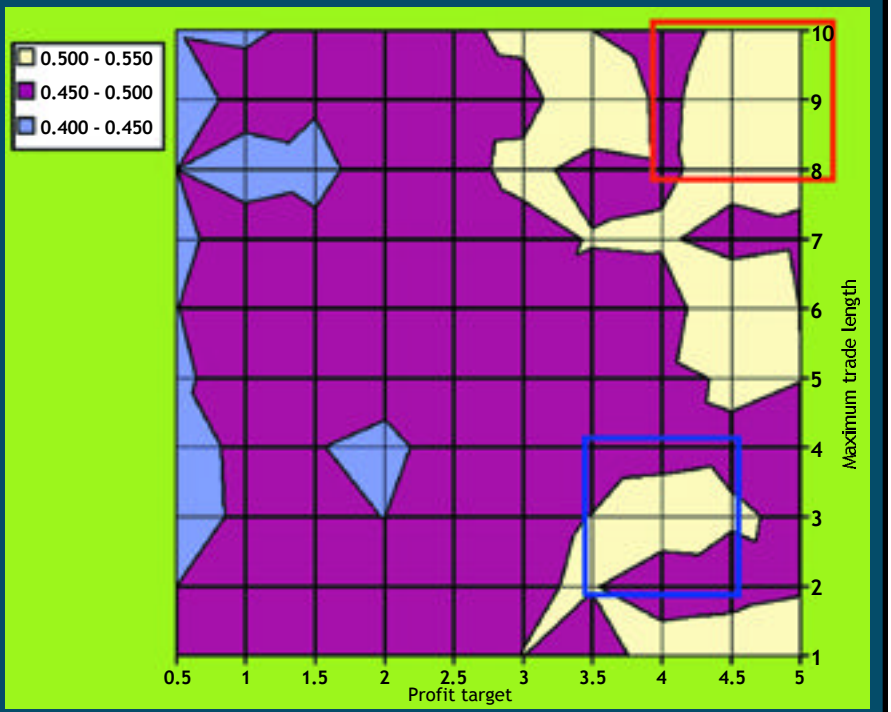
The area surrounding the 1-percent stop-loss and the 4.5-percent profit target is the largest high-value area on the chart. A system with both a lower profit target and stop loss could work as well, but it would produce less reliable results.



Source: Proprietary calculations

FIGURE 3 TRADE LENGTH VS. TARGET

The 4.5-percent profit target also holds up well when compared to a range of maximum trade lengths. A 4-percent target combined with a much shorter trade length might work well, but it would be less reliable.



Source: Proprietary calculations

face chart are interspersed throughout the chart, it is a sign the system will be very unstable at those particular points.

Finally, it's important to have a feel for what will likely be the best range of values for the system parameters you are testing, so the very best values don't fall on the far edges of the chart. There is no way of knowing how the system will perform with parameter combinations that are not represented on the chart.

The results

Figure 2 shows the average profit per trade for all markets relative to different stop-loss (x-axis) and profit-target (y-axis) combinations (the optimal trade length is not considered). The extended band of pale yellow (which represents average per-trade profits between .5 and .55 percent) suggests profit target of about 4.5 percent produces the best results, regardless of the stop-loss level. However, the largest uninterrupted high-value area is around the 1-percent stop-loss level, as indicated by the red square. (An optimal stop-loss of 1 percent was also suggested from the research in last month's article.)

Figure 3, which shows the performance of different combinations of profit targets (x-axis) and maximum trade lengths (y-axis), also indicates the 4.5-percent profit target works best. Here, the stop-loss levels are not considered. In particular, it seems that a profit target of 4.5 percent paired with a trade length of nine days works best (red square).

However, a maximum trade length of nine days does not fit with last month's research that showed the optimal trade length should be no more than four days. The "error" we made in that article, however, was to force the maximum trade length to also function as the profit target. In other words, because many 4.5-percent moves are likely to happen within the first four days of the trade, the lack of a profit target forced us to use a shorter maximum trade length to make the most of those moves.

Figure 4 shows that, when comparing the trade length (x-axis) with the stop-loss level (y-axis), regardless of the profit target, there are only a few areas (the pale yellow) representing an average profit per trade of more than 0.5 percent. Specifically, the best choices seem to be a three-day trade length combined with a 0.8-percent stop loss, or a nine-day

trade length combined with a 0.4- to 0.6-percent stop loss (blue squares).

However, none of these alternatives fit well with the best-performing parameters discovered from Figures 2 and 3. The three-day trade length can be immediately ignored because the trade length no longer needs to function as the profit target. (However, we should remain open to the option that a three-day trade and a 4-percent target might be a good combination, as indicated by the blue square in Figure 3.)

Tightening the stop-loss to about 0.5 percent in accordance with a maximum trade length of nine days also has a few disadvantages. First, the stop-loss will be awfully tight, considering this is an multiday strategy. Second, this also would force us to lower the profit target to approximately 4 percent to capture the large high-value area captured in the blue box in Figure 2. However, this would result in less robust performance because the blue square also encompasses more low-profit areas than the red square around the 4.5-percent target.

Therefore, it is probably best to stick with the 1-percent stop and the nine-day trade length, as indicated by the red square in Figure 3. The results might be a little lower, but the upside is that they will be the most robust of all the options.

The reward/risk relationship

With a stop-loss of 1 percent and a profit target of 4.5 percent, the system is going into each trade with an excellent 4.5:1 reward/risk ratio. However, because not all trades will be winners and fewer still will be stopped out with a maximum profit of 4.5 percent, the actual reward/risk relationship over a few trades will be slightly lower.

To calculate the exact relationship we need to know exactly how many losers there are likely to be for every winner. However, because we don't know those numbers, the best we can do is to estimate the number of winners and losers based on experience and the system's characteristics.

It's fair to assume that a 1-percent stop loss is quite tight, which should result in a large number of losing trades. Assuming that only every third trade will be a winning trade and that the average loser is equal to the stop-loss level of one percent, we can calculate the value of the average winner according to the following formula:

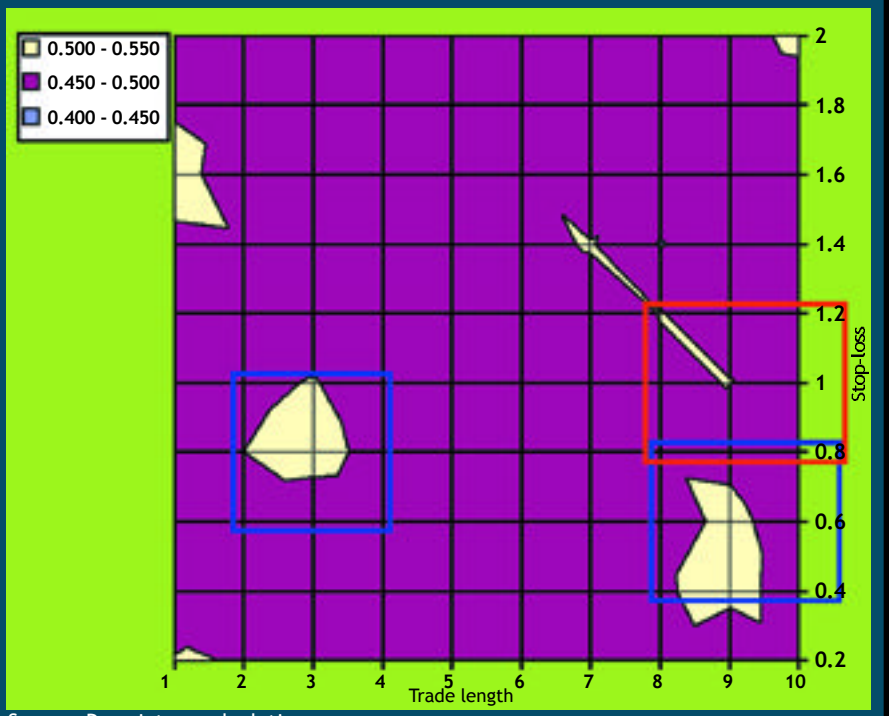
Average winner (AW) = [(AT * NT) + (AL * NL)] / NW

where

AT = Value of average trade
AL = Value of average loser
NT = Number of trades
NL = Number of losers
NW = Number of winners

FIGURE 4 STOP LOSS VS. TRADE LENGTH

Although the 1-percent stop-loss level combined with the nine-day trade length is not the best alternative based on this chart alone, it is the preferred alternative given the conclusions from Figures 2 and 3.



Source: Proprietary calculations

With three trades — one being a winner and the other two losers — and the value of the average trade being 0.5 percent, the average winner comes out to 3.5 percent {[(0.5 * 3)+ (1 * 2)] / 1}. The actual reward/risk relationship is thus 3.5:1.

If, on the other hand, as many as 50 percent of all trades turn out to be winners, the average winner will be 2 percent {[(0.5 * 2) + (1 * 1)] / 1}, for a reward/risk relationship of 2:1

Assuming 50-percent profitable trades, making a 2-percent profit, on average, within nine days does not seem to be as good as the results of last month's testing, which indicated we could make 2 percent, on average, during four days with only a four-day maximum trade length and no profit target.

The difference lies in the profit target. It tells us that we can expect to make 4.5 percent within nine days, for a profit of at least 0.5 percent (4.5/9) per day. The key words here are *within* and *at least*, which is better than expecting 0.5 percent per day on average, after four days (2/4), without the profit target.

Even if the average profit per day happens to be lower with the profit target, the target still adds value to the system because it helps build confidence about its results. At the same time, it also adds robustness, which means it is more likely to be successful in the future than a system with no profit target and a shorter maximum trade length.

What you might lose in average profit per day using a profit target, you will gain in an increased likelihood for long-term success. That's not a bad trade-off.

For more information on the author see p. 3.

Indicator insight: Put/call ratio

The put/call ratio compares the volume of put options to the volume of call options traded on the Chicago Board Options Exchange (CBOE). It is used to measure the level of public bullishness or bearishness in the market at a given time.

Put options give the owner the right to sell stock at a certain price for a certain period of time; call options give the owner the right to buy stock at a certain price for a certain time. As a result, public investors and traders tend to buy put options when they think the market will fall, and they buy call options when they expect the market to rise.

The put/call ratio is a contrarian indicator in that it assumes the investing public is usually wrong about what the market will do. That is, when the public is buying an excessive number of puts — which typically happens when the market has already sold off and people are nervous about losing more money — bearish sentiment is at an extreme and the market is likely to establish a bottom. The opposite is true when call volume greatly exceeds put volume.

Put/call ratios can be calculated on individual stocks or any group of stocks. The most common put/call ratio is based on the total CBOE stock and index option volume. Other put/call ratios exist just for stock and S&P 100 index (OEX) options. Because of institutional activity in OEX options, some traders feel the equity put/call ratio most accurately reflects the trading public's sentiment.

Calculation

Regardless of whether index or equity options are being used, the put/call ratio is calculated by dividing the number of put options traded by the number of call options traded over a specific time period:

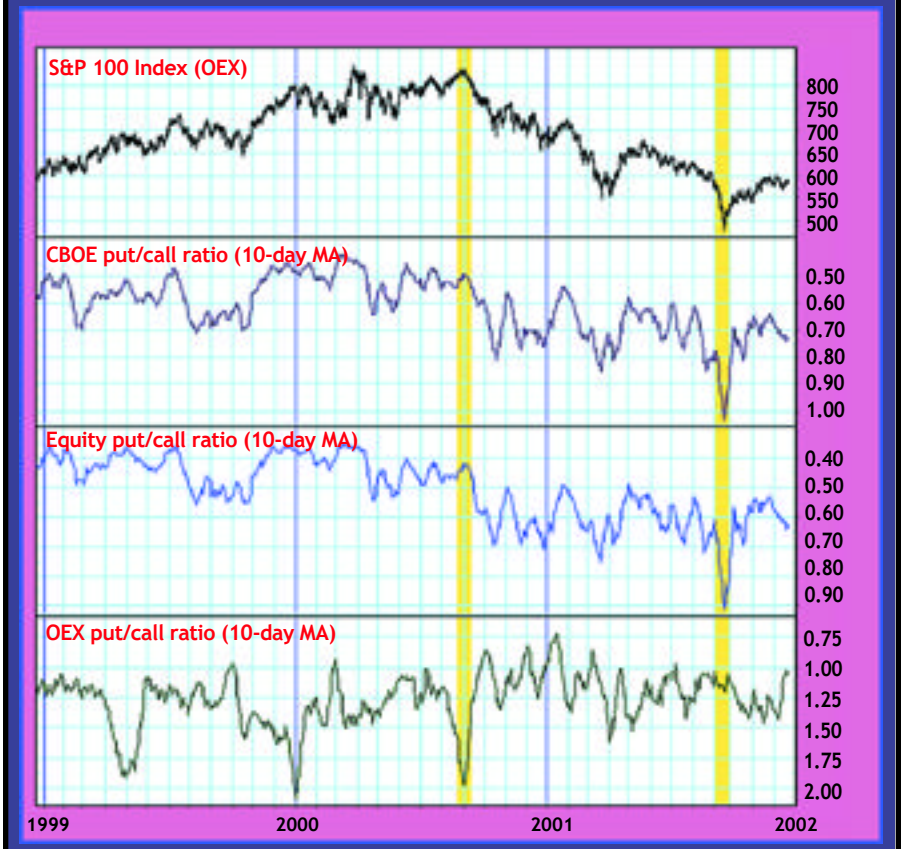
$$\text{Put/call ratio} = \frac{\text{put option volume}}{\text{call option volume}}$$

The higher the put/call ratio, the more put options are being traded relative to call options. Figure 1 (below) shows the OEX index with three put/call ratios: (from top to bottom) the CBOE put/call ratio (total of all index and equity options traded on the CBOE); the equity option put/call ratio (stock options only); and the OEX put/call ratio (S&P 100 options only).

Because the basic put/call data is so volatile, it is commonly smoothed with a moving average (Figure 1 actually shows 10-

FIGURE 1 10-DAY MOVING AVERAGES OF PUT/CALL RATIOS

The yellow bands highlight two notable differences between the CBOE (total) and Equity put/call ratios and the commonly referenced OEX put/call ratio. The put/call ratios shown here have inverted scales.



Source: DecisionPoint.com

day moving averages of the different ratios). Also notice the indicators have been inverted in this chart to make them more intuitive. On this chart, high put/call ratios appear as lows on the chart (which makes them look more like oscillator overbought signals, to which they are similar).

Online resources

Put/call data on the Web:

The **CBOE** Web site (www.cboe.com) publishes the OEX put/call ratio every day. **Market Tells** (www.astrikos.com) shows intraday updates of the put/call ratio (via Quote.com).

Hamzei Analytics (www.hamzeianalytics.com) is a subscription site that provides various custom put/call ratios, including those on individual stocks.

DecisionPoint software (www.decisionpoint.com) includes put/call ratios on both index and equity options.

Key points

The put/call ratio is typically calculated on a daily basis, but it can be measured on both intraday time frames (see Figure 2, below) and weekly (or longer) time frames as well.

Figure 1 reveals a noticeable difference between the OEX put/call ratio and the CBOE and Equity put/call ratios. For example, in October 2001, the CBOE and Equity option ratios both gave exceptionally high (bullish) readings when the market bottomed that month. The OEX put/call ratio did not. Also, the OEX put/call ratio made an extremely high (bullish) reading in September 2000 (which appears as a low point on the inverted chart) while the CBOE and Equity put/call ratios were still at relatively low (bearish) levels, reflecting complacency. The market subsequently sold off.

As with any sentiment indicator, readings should be put into the context of the broader market conditions and not interpreted as automatic buy or sell signals. As Figure 1 suggests, a high put/call ratio does not always indicate a rally, and a low ratio is not always accompanied by a sell-off. It can be used as a tool to assess the mood of the market in a broad sense, but actual price movement must ultimately dictate trading decisions.

FIGURE 2 INTRADAY PUT/CALL RATIO

Put/call ratios are available on intraday data as well as longer time frames.

Source: Quote.com

Bottom line

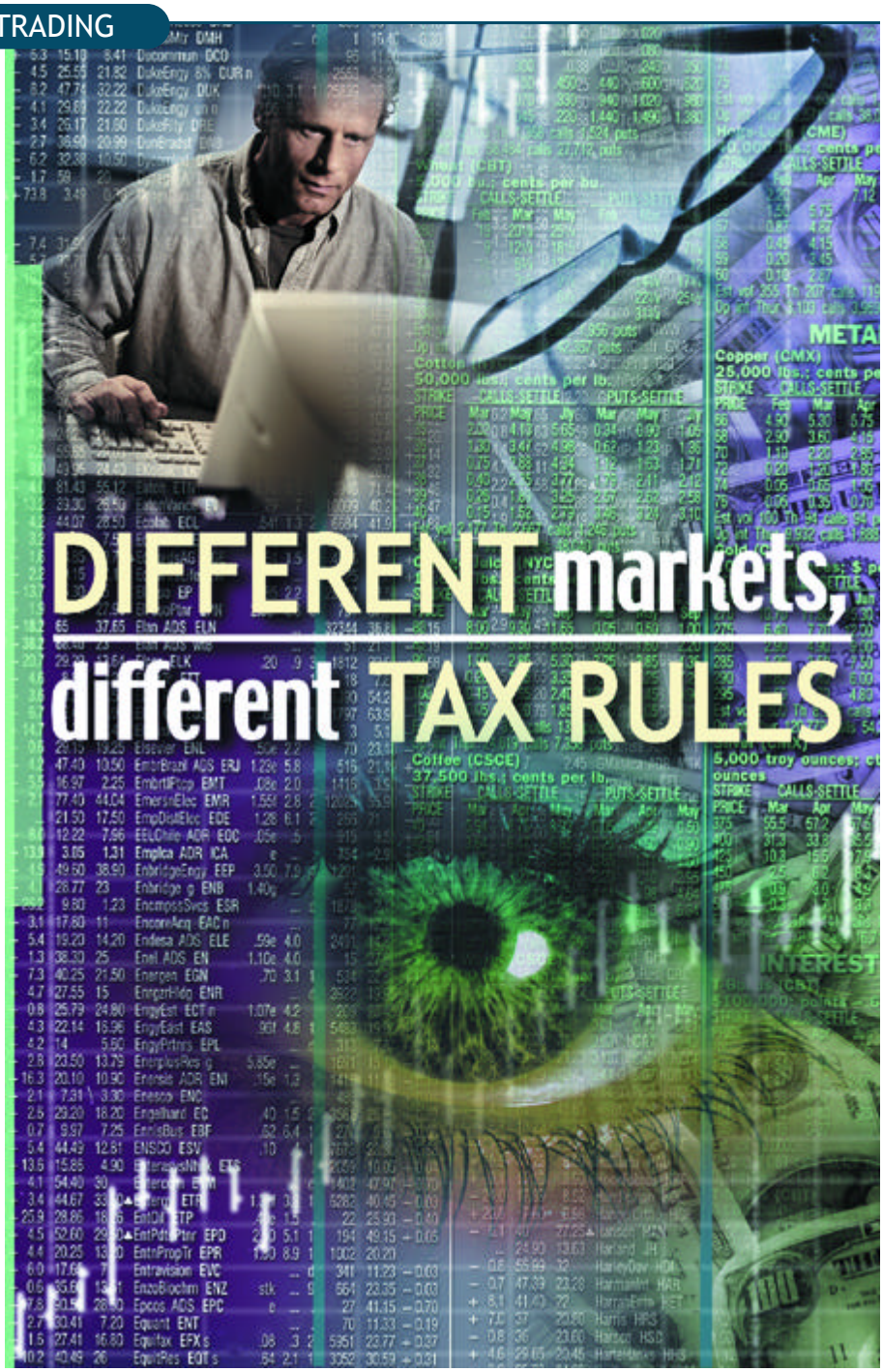
The put/call ratio measures market sentiment by comparing the trading volume of put options to that of call options. It is based on the concept that high levels of put volume (high put/call ratios) reflect extreme bearishness on the part of the investing public, which is considered a contrarian signal and a warning of a potential market bottom. The opposite is true of high call-volume levels (low put/call ratios).

Additional reading

"Getting started in options,"
Active Trader, April 2001, p. 82

"The Ansbacher Index,"
Active Trader, February 2002, p. 52

"Getting sentimental about options,"
Active Trader, March 2002, p. 62



DIFFERENT markets, different TAX RULES

The differences in tax treatment for stocks and futures become even more apparent when you're active in both markets. We look at how the IRS handles stock and futures transactions, and what you can do to avoid losing out on tax breaks.

BY ROBERT A. GREEN, CPA

Experienced, diversified traders tend to think of all markets — stocks, futures, currencies, interest rates — as essentially the same thing: They go up, they go down or they move sideways.

Many traders would be surprised to find out the IRS doesn't maintain a similar perspective. Tax treatment for stocks and futures is not the same, and for traders who are active in both markets, the complexities of sorting through the distinctions can quickly become a nightmare. Smart traders must plan ahead to be able to get the tax breaks they're entitled to.

Tax treatment for stocks

Stocks are defined as "capital assets," and as such are taxed at "short-term" capital gains tax rates (the "ordinary" income tax rates).

To benefit from lower "long-term" capital gains tax rates, a stock trader must segregate investment positions from trading positions, and hold investment positions for a minimum of one year.

Stock traders who have trading losses are subject to two severe tax limitations. First, capital losses must be reported on Schedule D and are limited to $3,000 per tax year. Excess capital losses may be carried over to future tax years, meaning these losses can be used only against future capital gains or applied to the $3,000 loss limit in a future tax year.

The second loss limitation is the wash-sale rule. If a stock trader re-enters a losing position within 30 days of exiting it,

any realized loss on that position is deferred to that new position's cost basis — it cannot be used as a tax loss. Wash sales are a nightmare for traders, but the wash-sale rule applies only to stocks, not futures.

Stock traders can get around these limitations by using election IRC 475(f), otherwise known as the Section 475 election or "mark-to-market" accounting. However, traders must be able to prove they are in the business of trading to benefit from this favorable tax treatment.

Tax treatment for futures

In 1986, Congress and the IRS passed tax laws (IRC Section 1256) to stop the proliferation of "commodity straddle tax shelters." Before the passage of IRC Section 1256, traders were able to hold simultaneous long and short positions in the same futures contract, generating little or no economic risk. The tax shelter involved closing the losing side of the position in the current tax year (to lower tax liabilities) and keeping open the profitable side of the straddle position, the taxes on which would be deferred to the following year.

IRC Section 1256 ended this abuse by "marking to market" all open positions at year-end, removing the ability to defer the winning position to the following tax year.

Congress figured that since it was effectively taking away the taxpayer's ability to hold positions for more than a year for long-term capital gains rate treatment, it compensated by stating that all IRC Section 1256 gains and losses are treated as 60-percent long term and 40-percent short term. Section 1256 contracts are first reported on Form 6781 and then net gains and losses are transferred to Schedule D accordingly.

IRC Section 1256 capital losses may also be carried back three tax years to offset Section 1256 trading gains in those years.

Tax law automatically classifies all investment vehicles as "capital assets," unless they are specifically defined as Section 1256 contracts. Currently, Section 1256 contracts include any regulated futures contracts, foreign currency futures contracts, non-equity options, and dealer equity options (equity options traded by someone who is actually an options dealer — i.e., a floor broker). As a rule of thumb, futures on broad-based indices (such as the S&P500 futures) are Section 1256 contracts, while futures on narrow-based indices (indices that cover stocks in one industry or sector, such as the Philadelphia Stock Exchange semiconductor index) are treated as equities.

Whenever you are not sure what constitutes a Section 1256 contract, contact a trader tax expert or your brokerage firm.

Similarities in stock and futures tax treatment

Despite the differences outlined in previous sections, tax treatment for stocks and futures is similar in many regards.

First, capital losses are entered on Schedule D and are limited to $3,000 per year.

Second, when stock or futures trading is deemed a business by the IRS, traders from both groups report their trading business expenses (including margin interest, home office deductions, etc.) on Schedule C. This tax treatment generates tax savings because expenses are treated as "ordinary losses" and are not subject to a cap or limit (see "Don't miss out on trader tax breaks," *Active Trader*, March 2002, p. 98).

Third, stock and futures trading gains are both derived from the sale of capital assets and are thus not considered "earned income." The good news about this is that earned income is subject to self-employment tax. On the downside, earned income can be used for purposes of deducting health insurance premiums and making contributions to retirement accounts.

Differences between stock and futures tax treatment

As noted before, commodities traders report their trading profits as 60-percent long-term capital gains and 40 percent short-term capital gains. Stock traders report profits as 100-percent short-term capital gains, thereby paying a higher tax rate on gains.

Tax treatment for stocks and futures is not the same, and for traders who are active in both markets, the complexities of sorting through the distinctions can quickly become a nightmare. Smart traders must plan ahead to be able to get the tax breaks they're entitled to.

Futures traders are also allowed to carry back Form 6781 trading losses for three years. Stock traders may only carry trading losses forward.

Futures traders are not burdened with the onerous wash-sale rules, because they are marking all open positions to market at year-end; stock traders have to endure this nightmare unless they elect mark-to-market accounting. And, since most active traders don't keep many open positions at year-end, reporting unrealized gains and losses is usually not a significant tax factor.

Getting immediate tax relief

Commodities traders are allowed to

carry back trading losses three years, although they can only apply those losses to gains on commodities. However, many commodities traders don't have gains for prior years. Stock traders can only carry losses forward, and only $3,000 at a time, and the wash-sale rule can defer significant losses to the following tax year.

The key to getting around these rules is to turn capital losses into ordinary losses. Ordinary losses can then become a Net Operating Loss (NOL). NOLs can be carried back two years or carried forward, and can be used against all types of income. Traders who use their Section 475 election and choose mark-to-market accounting can convert their capital losses to ordinary losses.

For stock traders, this is a no-brainer. This "loss insurance" is free, because trading gains on stocks are taxed at the same tax rate as capital gains.

Commodities traders face a difficult choice. They have to weigh the benefit of having all losses treated as ordinary against the drawback of paying (higher) ordinary tax rates on their commodities trading gains.

If you trade stocks 300 times per year and commodities 300 times per year, the IRS may take the position that you don't qualify as being in the trading business for either securities or commodities, and thus don't qualify for trader tax status.

Where's the confusion?

Some traders become confused when they are not certain if what they are trading is classified as stocks or futures (as in the case of index futures). Further complications arise when a trader is active in both stocks and futures and wants to use the most advantageous tax treatments of each.

Stock traders electing mark-to-market accounting and trying to qualify for trader tax status also adds to the confusion.

Are you qualified?

A trader must be "qualified" as such in the eyes of the IRS before he or she can elect mark-to-market accounting. For more information on qualifying, see IRS Publication 550, "Special Rules of Traders." This and all IRS publications are available at www.irs.gov.

Do not confuse the Section 475 mark-to-market election with the Section 1256 mark-to-market rules concerning commodities. Although the concept is the same, these are two different tax codes with different outcomes and related tax strategies.

Section 1256 mark-to-market accounting is automatically applied to all commodity transactions, whether one is an investor or qualifies for trader tax status.

Section 475 is voluntary. It may only be used by qualified traders who elect it on time in the proper manner. For example, if you wanted to elect Section 475 for

2002, you had to attach an election statement to your 2001 tax return or extension and file it by April 15, 2002 (see "Extending your tax options," *Active Trader*, April 2002, p. 94).

Traders of both, beware

The IRS considers stock trading and commodities trading to be separate businesses. If you trade stocks 300 times per year and commodities 300 times per year, the IRS may take the position that you don't qualify as being in the trading business for either securities or commodities, and thus don't qualify for trader tax status.

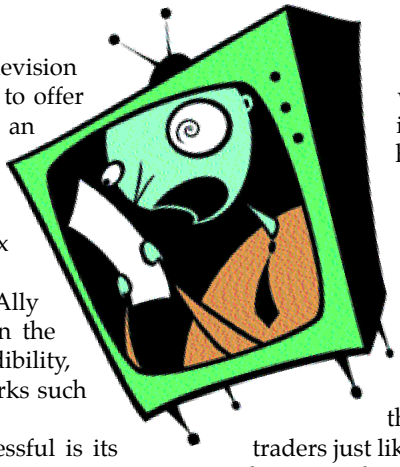
If this happens to you, consider trying this (as long as the facts support it): Argue that your trading in securities and commodities is related — for example, you hedge your stock positions with commodities. A note of caution: if you elected Section 475 for stocks only, the IRS may want to apply Section 475 treatment to both securities and commodities.

See a professional

Trader tax law is complex; when you trade stocks and commodities at the same time, trying to find the best approach can be overwhelming. We recommend you contact a highly experienced trader tax expert to review your specific facts and circumstances. He or she can help you make the best decisions about qualifying as a trader, Section 475 elections, and reporting stocks and commodities on your tax return.

For more information on the author see p. 3.

Crazy like a Fox



Once upon a time, the Fox Television Network had nothing more to offer the American public than an egomaniacal owner from Down Under. However, a multi-billion dollar NFL contract and several Emmy awards later, people are laughing *with* Fox instead of at it.

Over the years, "The Simpsons," "Ally McBeal" and "Boston Public" have given the network some financial oomph and credibility, which Fox has parlayed into cable networks such as Fox Sports and Fox Family.

However, what *really* makes Fox successful is its willingness to show almost anything, from "Wildest Police Chases" to "Who Wants to Marry a Millionaire?" to the recent "Glutton Bowl," which takes the concept of an eating contest to a new high — or low, depending on your perspective.

With more and more cable channels being added everyday, it seems reasonable that a Fox Trading channel is on the horizon. And when it comes to a satellite dish near you, here's a little bit of what to expect:

When Specialists Attack: Exclusive video from the floor of the NYSE shows some of the most vicious acts ever committed by specialists. Witness one attack a phone bank when a smart-aleck retail trader keeps stepping in front of his orders! See another specialist take an order from a floor clerk, put the order in his pocket — and forget about it until after the closing bell! Watch as trading in a volatile stock gets shut down — because the specialist can't handle all the order flow!

Because of the mature subject matter, parental discretion is advised.

America's Most Hyperactive Traders: You'll be amazed at the story of Bob from Cleveland, who had a catheter permanently attached so his trading wouldn't be interrupted by those silly bathroom breaks.

Also featured is Sal from Jackson Hole, Wyo., who bought a Starbucks franchise — and put it in his living room! That allows Sal to stay up 20 hours a day and trade the spot forex market.

In a special report, the show interviews a doctor from Argentina who is advertising in trading magazines. Apparently, the doctor has perfected the ability to surgically add a third eye or an extra hand to ambitious traders.

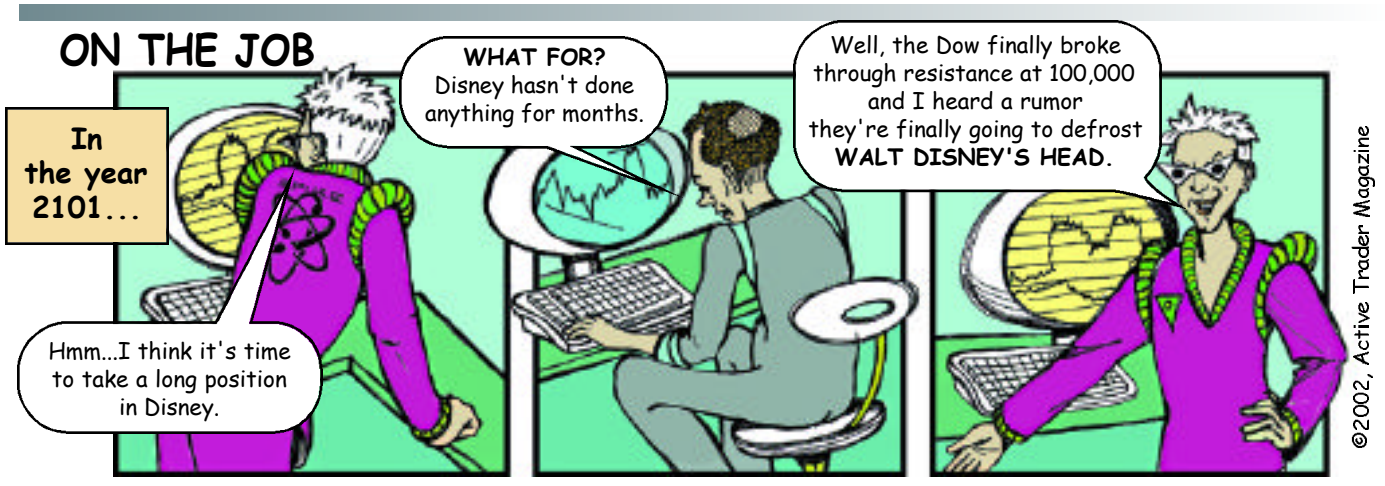
Funniest Trading Videos: Hosted by James Brown, this show takes a light-hearted look at the goofs, foul-ups and blunders committed by traders just like you. The trader who jumps for joy after seeing his stock shoot up 15 percent — only to discover he accidentally hit the "short" button when making the trade — is a classic. Then there's the trader who falls asleep on his keyboard and wakes up 20 minutes later — with 50,000 shares of ORCL in his account! Boy, doesn't *he* feel foolish.

Naturally, there are countless shots of traders whose pants fall off.

The Home Office: This reality game show is not for the faint of heart. It begins when a trader, seated in a comfortable chair, has to find a breakout of a trading range. That's simple enough, but as the game progresses, obstacles are added: A nagging spouse, a ringing phone, crying children, barking dogs, reruns of "Oprah" with Dr. Phil.

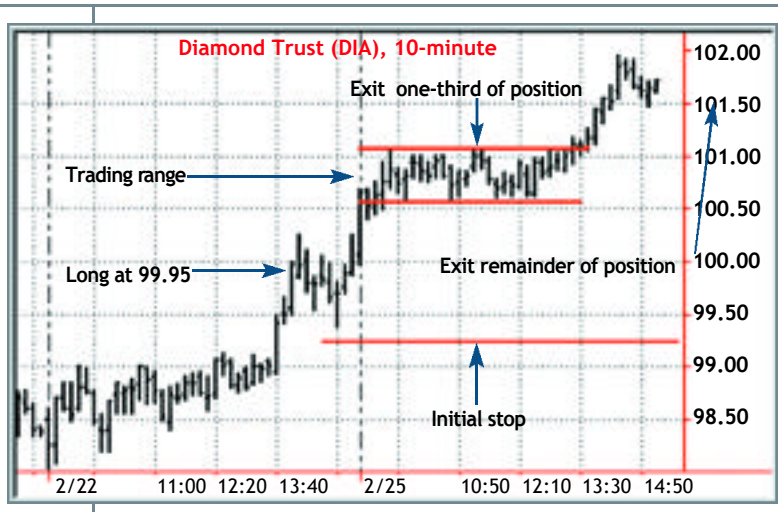
Traders who get past that stage move into the bonus round. They enter a room with three tables. On one is the trader's computer setup. On another is an all-you-can-eat buffet. The third table features a 50-inch HDTV with PlayStation2 hooked up. Any trader strong enough to overcome the temptation of dozens of chicken wings or John Madden 2002 earns $50,000 and a lifetime subscription to *Active Trader.*

Of course, if those shows don't make the cut, there's always the animated version of the Congressional hearings on Enron.



TRADE Diary

This month a late-day turnaround in stocks sets up a short-term long trade in the Diamonds.



Trade

Date: Friday, Feb. 22, 2002

Entry: Long the Dow Jones Industrial Average index trust (DIA) at 99.95.

Reasons for trade/setup: There was a late-day Friday turnaround in the stock market after four days of negative trading (in the S&Pand Nasdaq). We'll look for a rally on Monday and a likely exit on that day's close. This is similar to the "Friday bounce" trade described by Ben Warwick in the February issue of *Active Trader* (see "Ben Warwick: Taking the quantitative view," p. 62 of that issue).

Initial stop: 99.28

Target: None, really, since we'll exit on the close unless we're stopped out. After the most recent swing high of 100.79, the next resistance level is 103.14 (the 2002 high). For the sake of calculating reward/risk estimates, we'll use 103 as a target.

Pluses: The Dow has been the strongest index of the big three lately, and on Friday, stocks (including Nasdaq tech issues, which had been lagging the rest of the market) staged a strong late-day rally. This set up a good chance for follow-through on Monday.

Minuses: The market is, at best, in an intermediate-term trading range, and longer-term is still in a downtrend.

***Update* (Feb. 25, 11:22 a.m. EST):** Took profits on one-third of position at 100.97 as the market formed a resistance level at 101. DIAseems to be losing steam and forming a trading range. We raised the stop to 100.32. A profit, albeit a small one, is now locked in on this trade.

***Update* (Feb. 25, 4:00 p.m. EST):** We sold the remainder of the position on the close at 101.66. Unfortunately, the DIAhad sold off 30 cents or so in the last 40 minutes of trading, so we didn't capture as much profit as we could have.

Result

Exit: One-third at 100.97, two-thirds at 101.66.

Reason for exit: For the first third of the trade, the market had stalled and we wanted to take some profits and protect the remainder of the position. The last two-thirds of the position were exited on the close according to the trade plan.

Profit/loss: +1.48

Trade executed according to plan? Yes, for the most part. We didn't formally announce any intention of taking partial profits and raising the stop, but doing so is *de rigueur* for these trades.

Lesson(s): This worked out about as well as a one-day trade in the current market environment could. Perhaps a little more research of these events (i.e., finding the average move the market makes after these setups) might help develop better profit objective. In this instance, at least, an earlier entry and exit might have added a point or more profit to the trade.

The market's strength made it tempting to leave some of the position on longer, but that wouldn't have been advisable without further evidence to justify such a departure from the trade plan.

A final note: the intraday upside breakout on Feb. 25 is a reminder that not all breakouts are destined to fail. Intraday traders who got long on this move had a nice ride for the remainder of the day. A stop just below the trading range's resistance level would have made this trade a low-risk play.

Trade summary

Date	Stock	Entry	Initial stop	Initial target	Initial reward/risk	Exit	Date	P/L	Actual reward/risk
2/22/02	DIA	99.95	99.28	103	4.55:1	100.97 (1/3) 101.66 (2/3)	2/25/02	1.02*.33=.34 1.71*.67=1.14 Total = 1.48	2.21:1