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P.O. Box 7530  
Incline Village, Nevada 89452

## New DMI Indicators

# Avoid Bad Whipsaw Signals! Try Using TradingExpert's New +/- DMI Filter

By David Vomund

**I**n the new 7.2 release of AIQ's TradingExpert Pro there is a new indicator called +/-DMI. AIQ users have requested this indicator because it is often found in technical analysis books. Interestingly, the +/-DMI is not really a new indicator in TradingExpert. Instead, it is a different method of charting the Directional Movement Indicator (DMI). Let me explain.

Directional Movement is a concept that J. Welles Wilder, Jr. described in his book, *New Concepts in Technical Trading Systems*. The DMI is based on the assumption that when the trend is up, today's price should be above yesterday's high. Conversely, when the trend is down, today's low price should be lower than yesterday's low.

In calculating the +/-DMI indicator, when today's high is greater than the previous day's high, then the difference in the upward movement is the +DI. When today's low is less than the previous day's low, then the difference in the downward movement is the -DI. Inside days are ignored.

The +DI and -DI numbers are then averaged for a period of days (the default is 14) and then divided by the average true range. The results are normalized and displayed as oscillators.



DAVID VOMUND

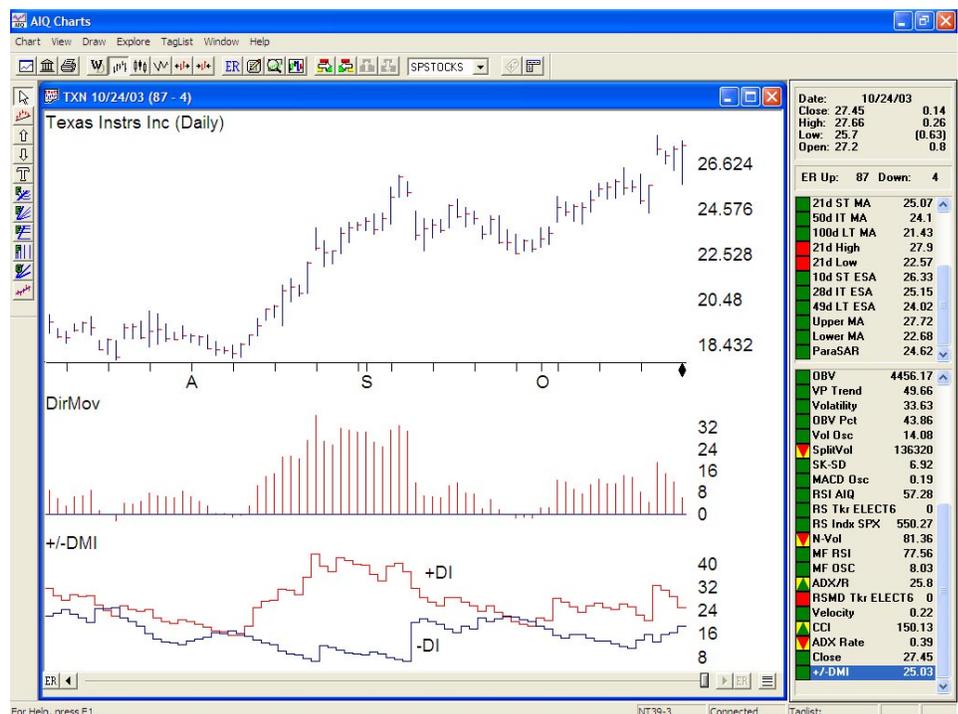
***"The +/-DMI can be used either as a system on its own or as a filter for a trend-following system...To make sure that you only act on signals in the direction of the trend, then only act on signals that agree with the +/-DMI signals."***

**Figure 1** shows a chart of Texas Instruments. The bottom of the chart displays the new +/-DMI indicator. If the +DI is above the -DI, the directional movement is up. If the +DI is below the -DI, then directional movement is

down. The greater the difference between the +DI and -DI, the more significant the trend. For this indicator, a buy signal is registered when the +DI crosses above the -DI. A sell signal is indicated when the +DI falls below the -DI.

The Directional Movement Indicator (DMI) is simply the difference between the +DI and -DI indicators. Comparing the DMI to the +/-DMI in Figure 1, we see that when the +DI crosses above -DI, the DMI rises above zero. When the +DI is well above -DI, as it was in late August, the DMI is very positive. The point is that these are the same indicators charted differently.

Why has AIQ added the +/-DMI indicator? One reason is to satisfy user requests. Many technical analysis books plot the +/-DMI indicator instead of the DMI. Traders wanted their systems to resemble the technical books. Another reason is that more advanced users wanted



**Figure 1.** Daily chart of Texas Instruments. Displayed below the price are the DirMov (DMI) and the +/-DMI indicators. Note the similarity between DirMov and the new +/-DMI indicator.

Another Welles Wilder indicator is the Parabolic system (ParaSAR).

This indicator works great in trending environments but whipsaws during sideways movement. Many of the whipsaws can be eliminated by combining the ParaSAR indicator with

the +/-DMI. Here is how it works — only act on ParaSAR buy signals when the +DI is above the -DI. Along the same lines, only act on ParaSAR sell short signals when the +DI is below the -DI.

**Figure 2** shows a chart of Textron Inc. (TXT). On the price chart is the ParaSAR indicator. This indicator gets its name from the shape assumed by the trailing stops that tend to curve like a parabola. Notice that as prices trend higher, the rising dots below the price

action, which represent the sell points, tend to start out slower and then accelerate with the trend. A buy signal occurs when prices rise above the downtrending dots.

Figure 2 shows seven buy signals (see arrows on price chart). During the same period, the +DI only rose above -DI three times (see arrows on DMI indicator). The ParaSAR is clearly a more sensitive system.

**“Another Welles Wilder indicator is the Parabolic system (ParaSAR). This indicator works great in trending environments but whipsaws during sideways movement. Many of the whipsaws can be eliminated by combining the ParaSAR indicator with the +/-DMI.”**

to run studies on just the +DI line. That is not possible when using the DMI.

The +/-DMI can be used either as a system on its own or as a filter for a trend-following system. Trend following systems often turn into whipsaws during non-trending environments. To make sure that you only act on signals in the direction of the trend, then only act on signals that agree with the +/-DMI signals. Let me explain with an example.

## AIQ Opening Bell Newsletter

David Vomund, Publisher  
G.R. Barbor, Editor

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While the information in this newsletter is believed to be reliable, accuracy cannot be guaranteed. Past performance does not guarantee future results.

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By using the +/-DMI filter, several of the bad whipsaw signals in the ParaSAR indicator would have been avoided. Directional Movement is positive from May through August so during this period only ParaSAR buy signals should be acted on. ParaSAR short-selling signals should be ignored. Using this technique, you only traded in the direction of the trend and two whipsaws were avoided.

Most people will continue to plot the DMI indicator instead of the +/-DMI because it is easier to spot crossovers. However, adding the +/-DMI indicator gives you the flexibility to experiment with the components that make up the DMI indicator.

David Vomund publishes VIS Alert, a weekly investment newsletter. For sample issues, visit [www.visalert.com](http://www.visalert.com).

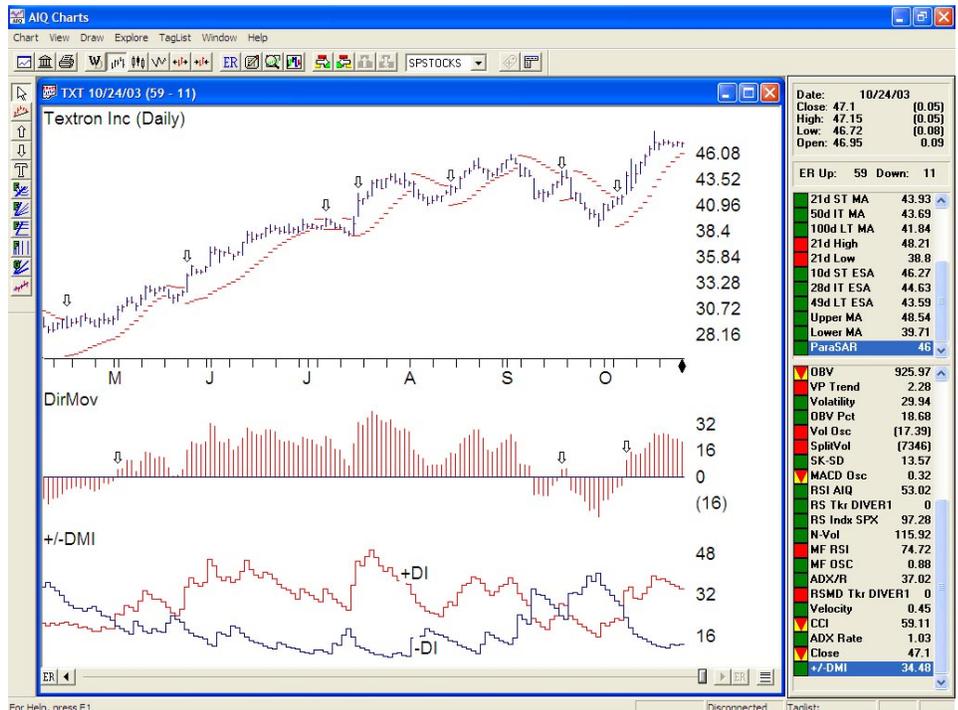


Figure 2. Daily chart of Textron with DirMov (DMI) and +/-DMI indicators. ParaSAR indicator has been added to price plot and arrows drawn to show ParaSAR buy signals. Note that +/-DMI gave only three buy signals during same period that ParaSAR gave seven buys.

### Market Review

October is supposed to be a “scary” month for the market. That wasn’t the case this year. Helped by strong economic and earnings news, the S&P 500 rose 5.5% in October. Even stronger were small-cap stocks with the Russell 2000 gaining 8.3%. The good news was punctuated by a very strong Gross Domestic Product (GDP) number. Third-quarter GDP grew at a sizzling 7.2 percent annual rate, the fastest since 1984.

Several of the top performing industry groups in October were commodity related. Metals Mining rose 20%, Aluminum rose 18%, Steel rose 17%, and Forest Products rose 17%. Not all groups participated in the rally. Food Retailers lost 8%, Wireless Communications lost 6%, and Oil & Gas Services lost 6%.

Market averages have been very strong since the March lows. The best trendline is found on the Nasdaq Composite (Figure 1). The Nasdaq has touched this trendline



Figure 1. Daily chart of Nasdaq Comp. with support trendline that has been tested (arrows) but not penetrated since early March.

on four separate occasions (see arrows). As long as the Nasdaq is above this trendline, the bullish pattern is intact and oversold buy

signals will work better than overbought sell signals.

## Option Analysis

# 'Percent to Double' A Useful Tool for Option Traders

By Stephen Hill

*Option traders have asked AIQ to include the parameter Percent to Double in its popular OptionExpert software. This tool is used to establish realistic goals for option trades.*

**I**f you trade options, you've probably heard the term "Percent to Double." The question is, what exactly is Percent to Double? Why not Percent to Triple? I decided to ask the experts.

I contacted the pros at the CBOE and CME and asked: what is Percent to Double? A friendly support person at the CME referred me to an archived answer (obviously, this question has been raised before). The following paragraph is a paraphrased version of the archived answer to my question.

..."Percent to double" is not commonly used in the U.S., although it is used in Europe and the U.K. "Percent to double" is the percentage price rise needed in the price of the underlying for the option to double in price on the option's expiration date. The theory is that, the lower the Percent to Double, the better. Note, however, that for any strategy to work, the forecast for the underlying stock must be accurate...

I would disagree with the "not commonly used in the U.S." statement.

Here's an example of Percent to Double:

Consider that the price of XYZ stock is \$58 and the price of the XYZ March 60 Call is 3.50. At a stock price of \$67 on the day March options expire; this call will have a

value of 7.00, or double the current price of 3.50. A stock price rise from \$58 to \$67 is an increase of 15.5% (approximately), so that is the "Percent to Double" in this example.

That's the theory. But you'll notice that this explanation is a little light on details, plus the reference to the European style options with price on expiration. European style options are option contracts that may be exercised only during a specified period of time just prior to their expiration; American style options contracts may be exercised at any time between the date of purchase and the expiration date.

### How is Percent to Double calculated?

The answer relies heavily on the type of formula that is used to determine fair value of any given option given a specific set of circumstances. The most common model

used to determine fair value of options is the Black-Scholes analytical model. The Black-Scholes model determines a fair price of an option based on a set of conditions which include such factors as time to expiration, interest rates, volatility of the stock, and the option strike price.

*"There are some resources on the internet that offer Percent to Double as a service. Fortunately, AIQ's OptionExpert offers us an easy way to calculate Percent to Double."*

In computing Percent to Double there are 5 elements of information required. These are listed in **Table 1**.

The first two elements are given when we decide to open an option position. The price of the option at the given future date is also straightforward; it's twice the opening value of the option. Essentially, we have already determined a value of the option on the given date. What we need to determine is the value of the underlying that matches that option

**Table 1. Percent to Double input requirements**

- Today's underlying price.
- Today's price of the option.
- The future date for analysis.
- The underlying price at the future date.
- The price of the option at the future date.

value. To achieve this, the Black-Scholes formula needs to be resolved backwards.

Doing this by hand would be very time consuming. There are some resources on the internet that offer Percent to Double as a service. Fortunately, AIQ's OptionExpert offers us an easy way to calculate Percent to Double.

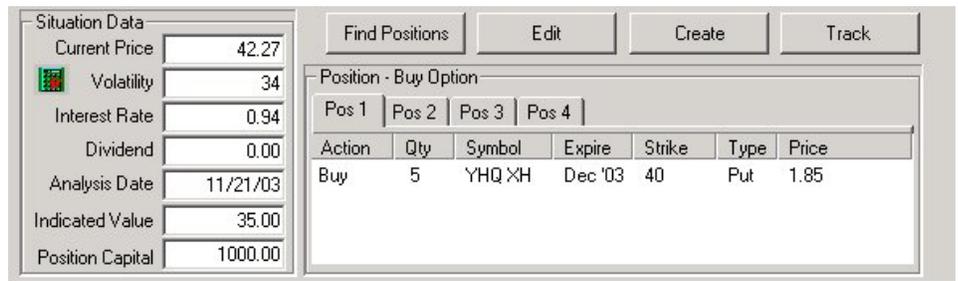
When evaluating options on a given underlying, by default OptionExpert fixes the analysis date to the next expiration. If we are within 10 days of next expiration, the date moves out to the next month.

The value of the underlying on that expiration date is also determined by using a modified slope formula based on work undertaken by Larry McMillan. However, the value of the underlying at expiration determined by OptionExpert is not going to match the value of the underlying we are looking for, but it does fix the parameters for us to move to the next step in the calculation.

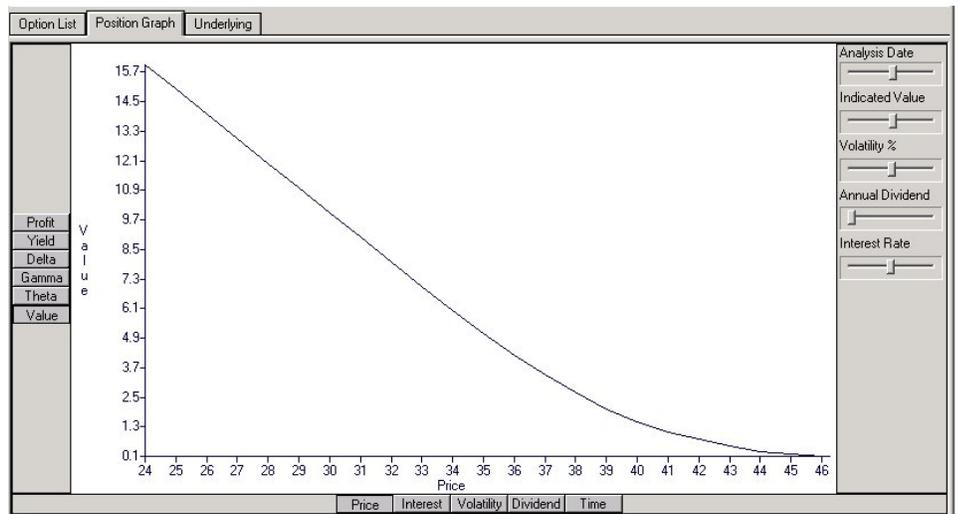
Let's look at an example that shows how we can use OptionExpert to find the value we need. **Figure 1** displays data for a straight buy of 5 contracts of Yahoo (YHOO) Dec '03 40 Puts at 1.85. Immediately we have two of our requirements, the current value of 1.85 and the value of the option at double the current price or 3.70.

Other information in **Figure 1** includes the value of the underlying today (42.27), date for analysis (in this case November '03 expiration of 11/21/03) and an indicated value for the underlying on that date of 35. The question is, how do we determine the value for the underlying on the analysis date that corresponds with a doubling of the option value (given that all other factors remain the same)?

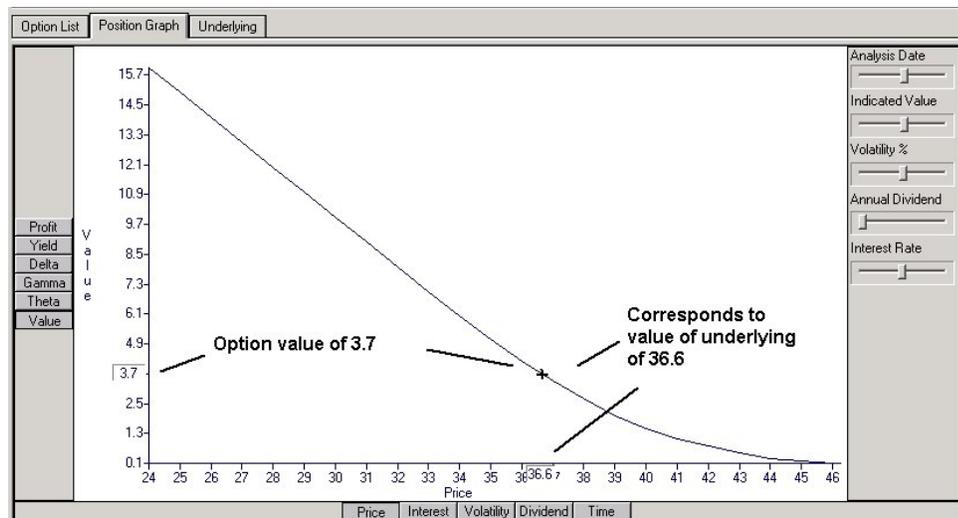
Fortunately, OptionExpert has several different graphical representations of any given option. For our purposes, we will use the price of the



**Figure 1.** Situation Data section of OptionExpert's Position Analysis screen. Data in left panel includes current price and volatility for Yahoo stock and a projected value of 35 on 11/21/03. The position data section lists a straight buy of 5 contracts of Yahoo Dec'03 Puts at price of 1.85.



**Figure 2.** Position Graph section of OptionExpert's Position Analysis screen. Plot displays relationship between option Value (vertical axis) and stock Price (horizontal axis) computed for the analysis date of 11/21/03.



**Figure 3.** Position Graph with annotations showing how the Stock Price corresponding to the target Option Value of 3.7 is easily found. To locate the exact value, move the crosshair along the curve. Notice values that appear on each axis to show exact coordinates of the crosshair position. When the value scale reads 3.7, the number shown on the Price scale (36.6) is the corresponding stock price.

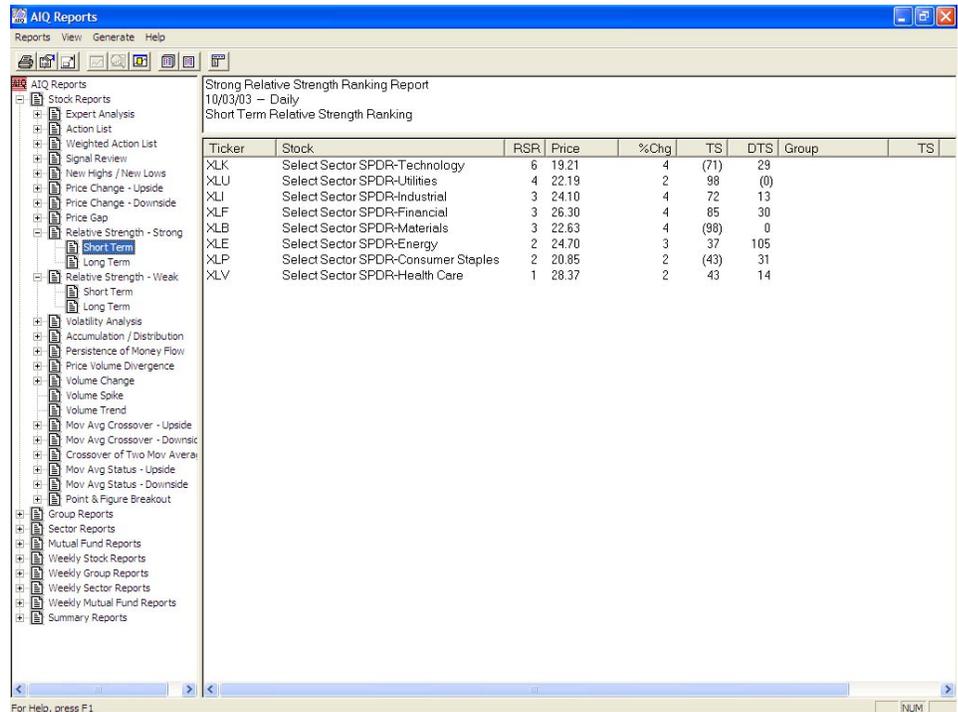
## Incorporating the Style Index Approach to Sectors

# Testing Our 'Relative Strength Report Strategy' Using Select Sector SPDRs

By David Vomund

Last month we discussed a trading approach that took advantage of the Relative Strength report and applied it to Exchange Traded Funds (ETFs) that track various market indexes. Now we'll apply the same approach to industry sectors to see how well it spots sector rotation.

For our sector trading test, we could have used sector funds from well known mutual fund families. The most popular choice would be Fidelity Investments. Fidelity's 40 sector fund choices give Fidelity the broadest selection compared to competitors. Making the sector funds more attractive, Fidelity has just lifted the 3% sales load (that's the good news about a bear market—products become more affordable!). Fidelity does charge a penalty if you hold a fund for less than 30 days, however. Information on Fidelity sector funds can be found at



**Figure 1.** Relative Strength (Strong) Report for October 3, 2003. The report, run on a list of eight SPDRs (sector ETFs), shows the Technology and Utilities sector funds in top positions.

[www.fidelity.com](http://www.fidelity.com).

The Rydex family of mutual funds also offers sector fund choices.

With 17 funds, Rydex doesn't offer the selection that Fidelity does, but it has the ones that count the most.

## Percent to Double (continued)

underlying versus value graph (see **Figure 2**).

To determine the price the underlying needs to attain for the value of the option to double, OptionExpert utilizes a crosshair that allows us to pinpoint this position on the price/value curve. **Figure 3** illustrates this point. The corresponding value of the underlying for an option value of 3.7 is 36.6.

Finally, we need to run a quick calculation to determine the percent change in the underlying that brought about the doubling in value

of the option. We'll use this formula:

$$PTD = \frac{V_2 - V_1}{V_1} \times 100$$

Where:

PTD = % to Double

V2 = Value of underlying on analysis date

V1 = Value of underlying on acquired date

Plugging in our example values:

$$PDT = \frac{36.6 - 42.2}{42.2} \times 100$$

$$PDT = -15.3\%$$

To sum up this example, for the December '03 40 put on Yahoo to double its value from the acquisition date to the analysis date, the underlying ticker must fall by 15.3%.

How would an option trader make use of the Percent to Double parameter? The first step is to take a look at the historical chart of the underlying security to determine how realistic it is for the value to change by the indicated percentage in the time frame used in the evaluation. If it appears unlikely, then you know that the upside potential of the position is limited.

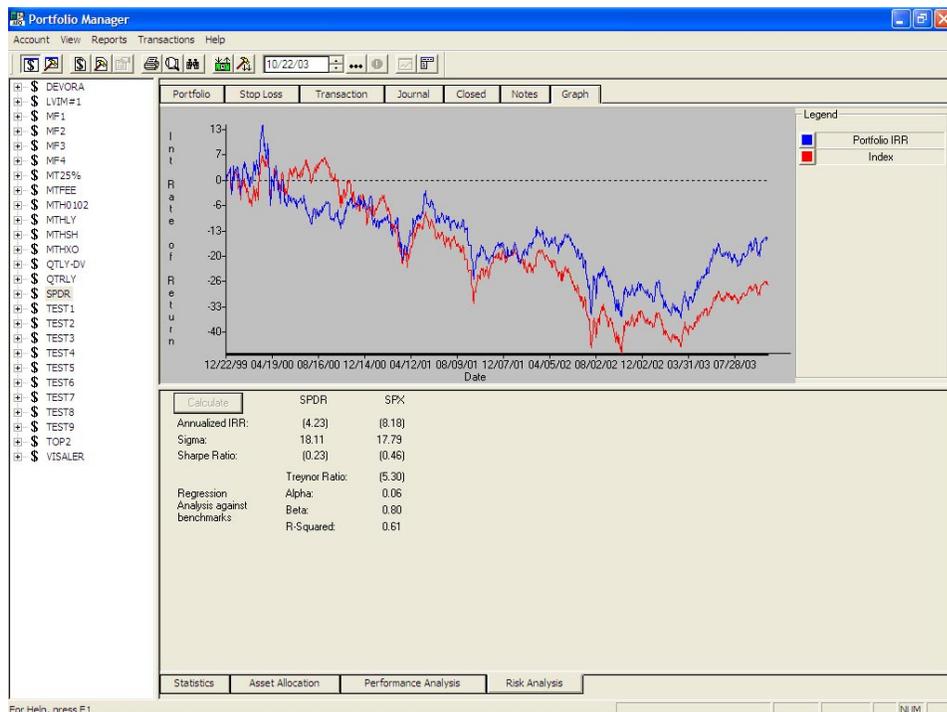
The advantage of Rydex funds is free unlimited trading. Information on Rydex sector funds can be found at [www.rydexfunds.com](http://www.rydexfunds.com).

Rather than using mutual funds to trade sectors, you can also use Exchange Traded Funds (ETFs). First launched in the early 1990s, ETFs are securities that combine elements of mutual funds, but do so in a different way. Like mutual funds, ETFs contain a pool of securities. Like stocks, ETFs are traded on major U.S. exchanges and can be bought and sold anytime during normal trading hours. For more information on ETFs, visit [www.amex.com](http://www.amex.com).

There are several choices of ETFs that track industry sectors. For our study we decided to use the Select Sector SPDRs. Launched in early 1999, nine sector ETFs are now traded on the AMEX. These sectors can be bought or sold at any time during the trading day in the same manner as buying shares of stock. You can even sell them short. The nine sector choices are:

- Consumer Staples (XLP)
- Energy (XLE)
- Financial (XLF)
- Health Care (XLV)
- Industrial (XLI)
- Materials (XLB)
- Technology (XLK)
- Utilities (XLU)

The SPDRs are less aggressive than other sector choices. They are passively managed and only hold Standard & Poor's 500 stocks. The annual management fee is about half that of other sector mutual fund choices and they are liquid. There is good volume and unlike a stock or closed-end mutual fund, the number of shares in the marketplace is not fixed — if the demand for a given ETF outstrips supply at any point, an ETF specialist can create new ones from a basket of the underlying securities in the fund. When a large



**Figure 2.** Portfolio Manager screen with a graph of SPDR portfolio back test results (IRR vs. time) displayed in upper window. For comparison, a plot of S&P 500 performance is also shown.

transaction is placed, shares can be created or redeemed to meet demand.

### The Strategy

Our trading strategy utilizes AIQ's Relative Strength report. The Short-Term Relative Strength-Strong report was run every other Friday on the SPDRs.

This report looks at the last 120 trading days (approx. six months) and breaks them into quarters. A percentage return figure is calculated for each quarter. These returns are then averaged with twice the weight placed on the most recent quarter's worth of data.

At the start of the test, the two highest ranked ETFs were purchased with equal dollar amounts to establish a fully invested portfolio. Two weeks later, the Relative Strength

report was run again. If the current holdings were rated in the top half of the report, then there were no trades. If a holding had fallen in the Relative Strength report to where it was no longer in the top three, then it was sold and the highest rated ETF was purchased. The portfolio was always fully invested in two SPDRs.

***“For our study we decided to use the Select Sector SPDRs... These sectors can be bought or sold at any time during the trading day in the same manner as buying shares of stock. You can even sell them short.”***

The strategy is designed to rotate to the sectors of the market that have the best performance.

**Figure 1** shows the Relative Strength report on October 3, 2003. Since we are examining eight SPDRs, as long as our portfolio holdings are within the top four of the report then there are no trades. XLI and XLK

were being held at that time so no action was taken.

the worst performers during this time period and the system was unable to rotate to a sector that contained small-cap stocks. Consequently, there were no sectors that bucked the bearish market trend.

portfolio is above the S&P 500, their movement is closely tied together.

I hoped for better results from this test but I believe the problem with this system isn't the strategy but the vehicles used in the strategy. The SPDR sectors are too closely correlated with the S&P 500.

Sometimes knowing what doesn't work is as important as knowing what does work. I expect results would be improved by using the system on the Rydex or Fidelity mutual funds. We'll reveal the results of these tests in a future

***“While this strategy outperformed the S&P 500 by about 3% per year, its performance was not good enough to recommend it as a trading system. The fact that the sectors contain only S&P 500 stocks hurt the performance.”***

**Figure 2** shows a graph of

the SPDR portfolio along with the S&P 500. Although the SPDR

## Results

We chose to backtest the SPDRs because, of the ETF choices, they have the most history. The SPDRs began trading at the start of 1999. Since the Relative Strength report requires six months of data, the earliest our backtest could start was July 1999. That means our test was run mostly in a bearish environment.

The yearly results are found in **Table 1**. While this strategy outperformed the S&P 500 by about 3% per year, its performance was not good enough to recommend it as a trading system. The fact that the sectors contain only S&P 500 stocks hurt the performance. Large-cap stocks were

**Table 1. Yearly Returns (%)**

Year	Sector Trading	S&P 500 Index
1999*	8.21	6.39
2000	-6.44	-10.14
2001	-15.93	-13.04
2002	-15.66	-23.37
2003**	24.79	18.98
Average	-1.006	-4.236

\* beginning on 7/2/99

\*\* through 10/15/2003

### STOCK DATA MAINTENANCE

#### Stock Splits and other changes:

Stock	Ticker	Split	Approx. Date
ADVO Inc.	AD	3:2	11/10/03
Landstar System	LSTR	2:1	11/14/03
Horizon Bancorp	HBNC	3:2	11/18/03

#### Trading Suspended:

Apogee Technologies (APGT), Chateau Communities (CPJ), Cobalt Corp. (CBZ), Hispanic Broadcasting (HSP), Legato Systems (LGTO), Quintiles Transnational (QTRN)

#### Name/Ticker Symbol Changes:

AOL Time Warner Inc. (AOL) to Time Warner Inc. (TWX)  
 Cedar Shopping Centers (CEDRD) to Cedar Shopping Centers (CDR)  
 DQE Inc. (DQE) to Duquesne Light Holdings (DQE)  
 Value City Department Stores (RVI) to Retail Ventures (VCD)  
 Wire One Technologies (WONE) to Glowpoint Inc. (GLOW)

### TradingExpert Pro v7.2 Has New Features & Trading Strategies

Now's the time to upgrade to AIQ TradingExpert Pro v7.2. Best of all it's FREE for clients on the monthly plan with myTrack. New features are concentrated in two very important areas of the software, Real-Time Alerts and Portfolio Manager. Also available are over 60 new trading strategies and indicators.

**For a complete list of all new features in TradingExpert Pro v7.2 and to download this upgrade visit: <http://www.aiqsystems.com/TEIndex72.htm>**