If you glance at any price chart, you'll notice that market tops and bottoms seem easy to spot in hindsight. But trends reverse for countless reasons, so it is virtually impossible to identify these turning points as they are developing.

Last year, we analyzed a reversal-day pattern to find out whether the stock market tended to change direction following bars that make new five-day highs (or lows) before closing below (or above) the previous day's low (or high). (See “Related reading,” p. 53.)

The results were mixed. The pattern identified market bottoms accurately, but it failed to find market tops. This outcome simply reinforced market behavior found in previous studies: The market rebounded quickly from sharp sell-offs, but it also continued higher after large gains.

Here, we re-examine reversal patterns and search for scenarios that lead to short-term weakness or strength, using the S&P 500 tracking stock (SPY). Overall, SPY is much more likely to weaken after hitting new highs if it changes direction over two days instead of one. Also, two-day reversals found market bottoms nearly as well as the typical one-day, reversal-low definition used in our 2005 analysis (i.e., a new five-day low that closes above yesterday's high).

Two-day reversal highs and lows
The following three rules were used to define two-day reversal highs in SPY:

1. The current high is higher than the highs of the past five days.
2. SPY opens in the lower 40 percent of its daily range and closes within the upper 60 percent.
3. The next day’s close is below the current day’s open.

The rules are reversed for two-day reversal lows: The current low is lower than the lows of the past five days, SPY must open in the upper 60 percent of its daily range and close in the lower 40 percent, and tomorrow’s close is above today’s open.

We studied SPY’s daily price data from Jan. 29, 1993 to Sept. 13, 2006 and found 50 reversal highs and 36 reversal lows that met the criteria.

Analyzing the patterns
Figure 1 shows four reversal-high patterns within a strong uptrend from April to November 1995. Although SPY dropped further after some formations than others, the market declined following each of these patterns, if only briefly. The S&P 500 gained 16.22 percent during this six-month period, but these two-day reversal highs caught some of the few weak days within this rally, suggesting we’re on the right track. In contrast, standard reversal days that formed in Figure 1 (not shown) failed to identify any reversals within this uptrend.

A closer look at Figure 1’s reversal highs shows even when SPY did climb, the market remained below the pattern’s high for at least four days in all cases but one (July 27).

Figure 2 shows four reversal-low patterns from mid-April to the end of December 2005. Although all these lows were not perfect entry points, SPY climbed at some point in the first week following each of them. After the patterns formed on Aug. 26 and Dec. 3, SPY
rallied at least 1.65 percent the next week. While the market fell the day after reversal lows on April 20 and Aug. 8, it rebounded the next day.

Some of Figure 2’s patterns pinpointed more significant lows than others, but the market still traded above the pattern’s low in the following week.

Figure 3 shows three reversal patterns that formed in 2006. The market reacted differently after two reversal lows that formed in February. SPY traded sideways after the Feb. 7 pattern before it rallied 1.41 percent toward the end of the first week. But the market failed to climb following the Feb. 27 pattern.

However, a reversal-high pattern formed between July 3 and 5 and represented a critical short-term market high. While SPY climbed slightly following the pattern’s end, it then plunged 3.25 percent by the second week. Again, the market tended to hold above the pattern’s low or below its high during the first week.

**Reversal highs found market weakness**

Figure 4 shows SPY’s average daily performance on each of the 10 days following reversal-high patterns and also compares the market’s average cumulative post-pattern moves to its benchmark, or typical same-length move (the average of all one-day, two-day…10-day moves) since 1993.

The market tended to drop in the first week after reversal-high patterns, which supports the price action shown in Figures 1 and 3. SPY fell an average 0.12 percent on the first day and another 0.25 percent on the second day. By the end of the first week, the market had dropped 0.57 percent. While SPY regained ground in the second week, it was still underwater and well below its benchmark (0.36-percent gain) by the 10th day.

Table 1 lists the statistics behind reversal-high patterns and shows SPY’s daily average, median, maximum, minimum, and standard deviation values. The table also shows each day’s percentage of gains (Pct. > 0) and measures how often SPY exceeded the pattern’s high by that point. Finally, Table 1 shows the largest up moves (LUM) and largest down moves (LDM) on each of the following 10 days.

Overall, these statistics confirm the market’s likely decline in the first four days following reversal-high patterns. Although the median losses are smaller than their average counterparts during this period, both values still point in the same direction. Also, the market fell at least 52 percent of the time from days 1 to 4, and its LDMs are larger than its LUMs.

The table’s final row tracks how often SPY jumped above the pattern’s high by each day’s end. This occurred only 10 percent of the time on the first day, meaning SPY held below this level nine times out of 10. By the fifth day, the market still traded below the pattern’s high 60 percent of the time.

**FIGURE 3  TWO-DAY REVERSAL PATTERNS – 2006**

*The market didn’t reverse direction after all these recent reversals, but it did jump within a week of Feb. 8’s reversal low and sold off sharply after the July 3-7 reversal high.*

![Chart showing two-day reversal patterns in 2006.](chart3.png)

Source: eSignal

(continued on p. 50)
Reversal lows precede bullish rebounds

Figure 5 shows SPY’s average daily gains and losses in the two weeks following reversal-low patterns. Despite its initial 0.15-percent drop, the market climbed at least 0.12 percent on each of the next five days — a total gain of 1.30 percent. Although SPY slid toward the end of the second week, the S&P 500 still posted a 0.83-percent total gain, which doubled its benchmark, or typical 10-day performance (0.36 percent).

Table 2 lists the daily statistics behind SPY’s post-reversal-low behavior and supports the market’s initial weakness and subsequent rebound shown in Figure 5. The market’s first-day drop is fairly solid: Average and median losses are similar, the LDM is larger than the LUM, and the market gained ground just 33 percent of the time. However, SPY’s brief loss was limited — it remained above the reversal pattern’s low 78 percent of the time.

The market’s week-long rally (days 2 to 6) is also reliable. Overall, SPY’s daily average and median gains are roughly in-line, its intraday jumps are larger than its intraday drops, and the market rallied from 52 to 64 percent of the time. Finally, even when the market did fall during this period, it rarely crossed below the pattern’s low. By the sixth day, SPY still traded above this level 56 percent of the time.

But Table 2 contains a few discrepancies. For instance, SPY’s median gain on the third day is much smaller than its average (0.09 percent vs. 0.39 percent, respectively). Also, on the fifth day, the market’s intraday gain is about the same as its intraday loss, despite other signs of bullishness.

Stronger reversal patterns, same results

We also analyzed how the market behaved following reversal patterns that met stricter requirements. For example, we considered scenarios in which SPY hit 10-day highs (or lows) — instead of mere five-day extremes — before reversing direction. Here, the market’s behavior resembled its reaction to the five-day reversal patterns shown in Figures 4 and 5.

We also gauged SPY’s response to reversal highs that reached five-day highs before reversing below its low (instead of its open) by the next day’s close. Again, the rules are reversed for reversal lows, so the next day’s close is above the current day’s high (not its open).

The market tended to drop further on the second day after strict reversal highs and jump slightly higher following strict reversal lows. But there were no striking differences in SPY’s behavior with these patterns.
changes, which suggests these patterns identify turning points reliably.

Better late than never
While these patterns caught short-term reversals effectively, they share one drawback: SPY already reverses direction as the pattern forms, so you won’t catch the entire move.

During Figure 2’s first reversal low on April 20, SPY jumped 1.96 percent as that two-day pattern formed. After the pattern was confirmed on April 21, much of the rebound had already occurred, and the market sold off the next day.

Reversal highs are also vulnerable to this problem. Figure 1’s first reversal high on April 13 shows SPY sold off 0.58 percent as this pattern formed on April 17, 1995, which represented more than half its total decline over the next couple of days.

Despite these caveats, the market did behave as expected. Not only did SPY fall an average 0.57 percent in the first week after two-day reversal highs, but it often held below the pattern’s low even if the market continued to fall. Similarly, SPY rallied 1.30 percent from days 2 to 6 following two-day reversal lows, and it rarely dropped below that pattern’s low even if the market continued to fall. Also, additional analysis underscores the accuracy of these moves.

The market fell slightly on the first day after reversal low patterns, but it jumped an average of 1.30 percent from the second to the sixth day.

These statistics support the market’s rebound following reversal lows, especially from days 2 to 5. Even if the market didn’t rally during this period, it held above the pattern’s low 58 percent of the time.

<table>
<thead>
<tr>
<th>36 instances</th>
<th>Day 1</th>
<th>LUM</th>
<th>LDM</th>
<th>Day 2</th>
<th>LUM</th>
<th>LDM</th>
<th>Day 3</th>
<th>LUM</th>
<th>LDM</th>
<th>Day 4</th>
<th>LUM</th>
<th>LDM</th>
<th>Day 5</th>
<th>LUM</th>
<th>LDM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg:</td>
<td>-0.15%</td>
<td>0.67%</td>
<td>-0.96%</td>
<td>0.17%</td>
<td>0.85%</td>
<td>-0.68%</td>
<td>0.37%</td>
<td>0.94%</td>
<td>-0.67%</td>
<td>0.49%</td>
<td>1.05%</td>
<td>-0.57%</td>
<td>0.12%</td>
<td>0.73%</td>
<td>-0.59%</td>
</tr>
<tr>
<td>Med:</td>
<td>-0.19%</td>
<td>0.43%</td>
<td>-0.77%</td>
<td>0.20%</td>
<td>0.66%</td>
<td>-0.46%</td>
<td>0.09%</td>
<td>0.53%</td>
<td>-0.48%</td>
<td>0.33%</td>
<td>0.69%</td>
<td>-0.20%</td>
<td>0.16%</td>
<td>0.63%</td>
<td>-0.46%</td>
</tr>
<tr>
<td>Max:</td>
<td>4.38%</td>
<td>5.08%</td>
<td>0.00%</td>
<td>3.23%</td>
<td>3.41%</td>
<td>0.00%</td>
<td>4.87%</td>
<td>5.54%</td>
<td>0.00%</td>
<td>3.75%</td>
<td>3.88%</td>
<td>0.00%</td>
<td>1.99%</td>
<td>3.18%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Min:</td>
<td>-2.68%</td>
<td>0.00%</td>
<td>-3.68%</td>
<td>-2.49%</td>
<td>0.00%</td>
<td>-2.74%</td>
<td>-1.05%</td>
<td>0.00%</td>
<td>-3.76%</td>
<td>-2.42%</td>
<td>0.00%</td>
<td>-3.13%</td>
<td>-1.82%</td>
<td>0.00%</td>
<td>-2.17%</td>
</tr>
<tr>
<td>Standard deviation:</td>
<td>1.20%</td>
<td>1.19%</td>
<td>1.35%</td>
<td>1.27%</td>
<td>0.84%</td>
<td>1.22%</td>
<td>1.29%</td>
<td>0.95%</td>
<td>1.17%</td>
<td>1.03%</td>
<td>61.11%</td>
<td>38.89%</td>
<td>44.44%</td>
<td>63.89%</td>
<td>55.56%</td>
</tr>
<tr>
<td>Pct. &gt; 0:</td>
<td>33.33%</td>
<td>63.89%</td>
<td>52.78%</td>
<td>63.89%</td>
<td>55.56%</td>
<td>61.11%</td>
<td>38.89%</td>
<td>44.44%</td>
<td>63.89%</td>
<td>55.56%</td>
<td>61.11%</td>
<td>38.89%</td>
<td>44.44%</td>
<td>63.89%</td>
<td>55.56%</td>
</tr>
<tr>
<td>Cumulative percent of down moves that drop below pattern low:</td>
<td>22.22%</td>
<td>27.78%</td>
<td>36.11%</td>
<td>38.89%</td>
<td>41.67%</td>
<td>44.44%</td>
<td>50.00%</td>
<td>52.78%</td>
<td>52.78%</td>
<td>55.56%</td>
<td>61.11%</td>
<td>38.89%</td>
<td>44.44%</td>
<td>63.89%</td>
<td>55.56%</td>
</tr>
</tbody>
</table>

Related reading

“Follow-through or fake-out: Testing 20-day highs and lows”
Active Trader, April 2006.

Should you trade or fade 20-day price breakouts? Many traders monitor 20-day breakouts, but these events aren’t necessarily trade signals. This analysis investigates helpful breakout patterns in the S&P 500 tracking stock (SPY) since 1993.

“Can reversal days catch market turning points?”
Active Trader, October 2005.

So-called “reversal days” are fairly common one-day patterns, but they are prone to producing false signals. How well have reversal highs and lows pinpointed tops and bottoms in the S&P 500 tracking stock (SPY) over the past 12 years?

“Spikes and spiders”
Active Trader, August 2005.

Price spikes are one of the few chart patterns that are easy to both identify and analyze. This in-depth look at market behavior following spike highs and lows uncovers a few surprising trade opportunities.

The articles listed above are also part of the following article collection:

“Market Pulse collection, Vol. I”
This compilation of 12 Market Pulse articles from 2005 and 2006 is available at a discount to the price of purchasing the individual articles. Visit the Active Trader Store for more details.

You can purchase and download past articles at www.activetradermag.com/purchase_articles.htm.