Trading the market's mood

When small investors are extremely bullish or bearish, does it pay to bet against them?

BY DAVID BUKEY

Stocks got slaughtered the first week of March as the S&P 500 index (SPX) fell to its lowest level since September 1996 and the Dow Jones Industrial Average (DJIA) officially dropped 20 percent from Inauguration Day, leading pundits to label it the Obama bear market. Amid the chaos, the American Association of Individual Investors (AAII) released results of its weekly member survey in which 70 percent of respondents were bearish — the most pessimistic reading in 21 years.

KC *For more information about the following concepts, go to "Key concepts" on p. 78.*

- *Average and median*
- *Bollinger Bands*
- *Simple moving average*
- *VIX*

Such a negative reading from the AAII survey is a dream come true for contrarians, who argue that when the crowd becomes too frightened or greedy, the market is likely to change direction. Clearly, investors were throwing in the towel at this point, which can be the best time to buy stocks.

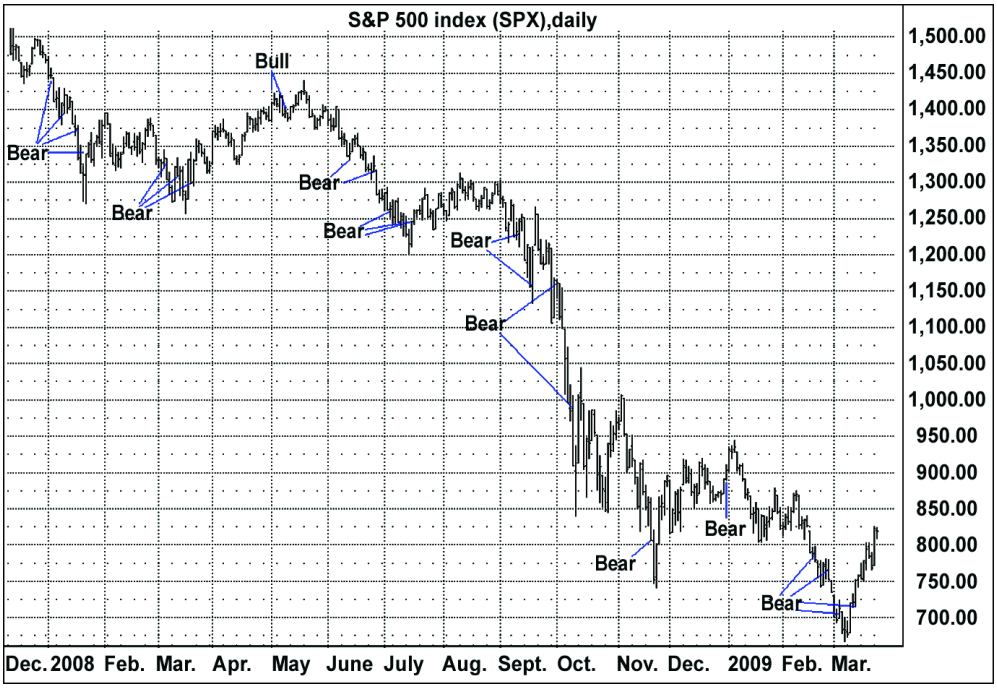
Indeed, the S&P 500 index gained 24 percent from March 6 to 25 — its biggest 13-day bounce since the Korean War.

At first glance, the AAII survey's bearish reading was a perfect contrarian market signal. But traders who follow the sentiment survey closely knew the AAII survey has issued similarly bearish outlooks in 17 of the past 52 weeks. Anyone who went long based on those previous readings would have been wiped out as the markets plunged lower.

Trading based solely on investor sentiment is tricky business, because extremes don't always appear at exact market turning points. But they still contain useful information. This study defines the AAII survey's extremely bullish and bearish readings two different ways and then measures the S&P 500 index's behavior up to 100 days after these readings. The analysis spans

continued on p. 16

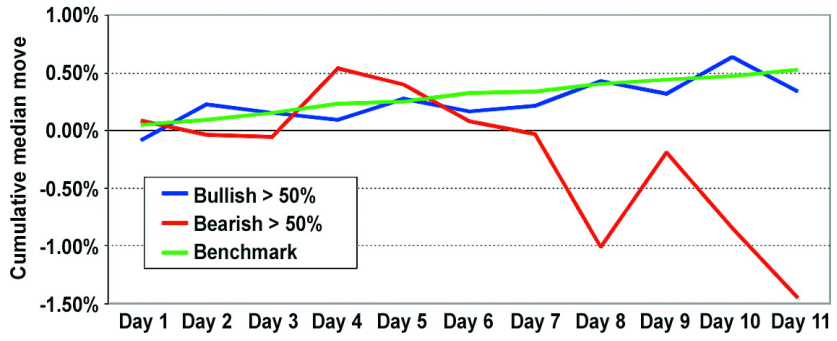
FIGURE 1: SENTIMENT EXTREMES



Extreme AAII survey readings are contrarian trade signals, according to conventional wisdom. However, investors were bearish at the beginning, middle, and end (so far) of the financial collapse, suggesting their opinions are at least somewhat informed.

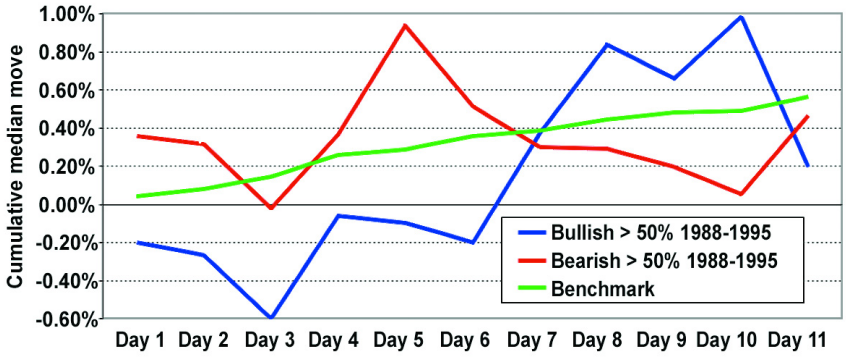
Source: eSignal

FIGURE 2: AFTER HIGH BULL AND BEAR READINGS



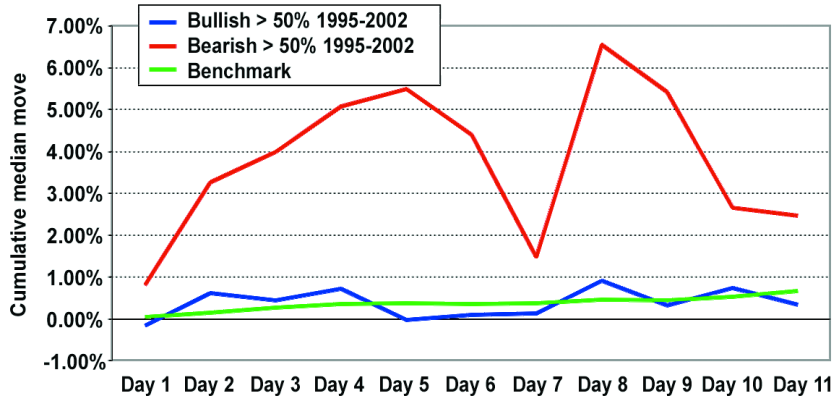
After extremely bullish survey results, the S&P 500 basically traded in line with its benchmark. But the S&P 500 sank 1.45 percent within 11 days after extremely bearish readings.

FIGURE 3: BULLISH VS. BEARISH, 1988-1995



At first, the S&P 500 moved in the opposite direction of AAII survey readings, jumping 0.36 percent after bearish forecasts and falling 0.20 percent after bullish results. But this pattern didn't last long.

FIGURE 4: BULLISH VS. BEARISH, 1995-2002



After bullish AAII survey results in the late 1990s (and early 2000s), stocks basically traded in line with their benchmarks. There was only one bearish reading during this seven-year period (red line).

21 years and examines whether the market's response to investor-sentiment extremes has changed.

Survey says ...

The AAII is a group of small retail investors and traders. Each week, the group asks its members where they think the market will be in six months — up, down, or flat; the organization publishes results as percentages of members who are bullish, bearish, and neutral.

Members can vote only once per week, and AAII posts the previous week's results before the stock market opens on Thursdays (Fridays before November 1993). Historical weekly survey data goes back to June 1987, and analysts track the various components: percentage of bullish and bearish members, and the so-called bull ratio (bullish / [bullish + bearish]).

No one has a crystal ball, and predicting the market's direction accurately in six months is no easy task. Also, as bull and bear markets mature, investors are driven more by emotion than facts. Investors clamored for technology stocks in the late 1990s just before that bubble popped, and after the financial markets crashed in 2008, many viewed stocks as radioactive, regardless of how cheap they became. As a group, investors have a long history of getting caught off guard.

There are countless ways to dissect AAII survey numbers, but one logical approach is to focus on weeks in which bulls or bears dominate more than 50 percent of the vote. Contrarians claim that if more than half of AAII respondents are bearish, the market is poised to rebound. By the same logic, if more than half are bullish, the market may peak soon.

When the majority rules

The first step is to measure the market's moves after more than half AAII survey respondents were bullish or bearish in any given week. The study compares how the S&P 500 has reacted to weekly AAII survey results from May 27, 1988 to March 12, 2009 and then breaks this

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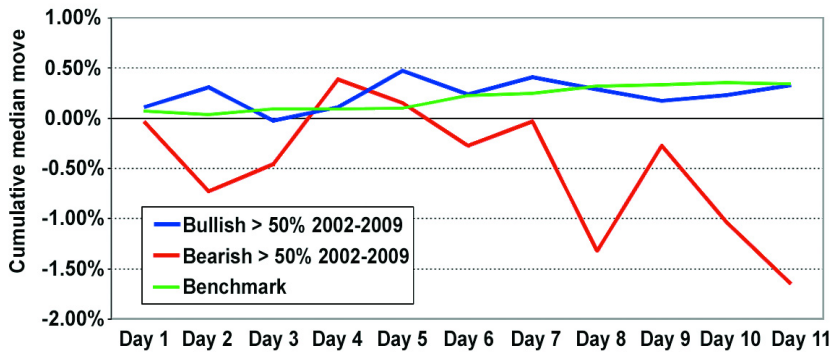
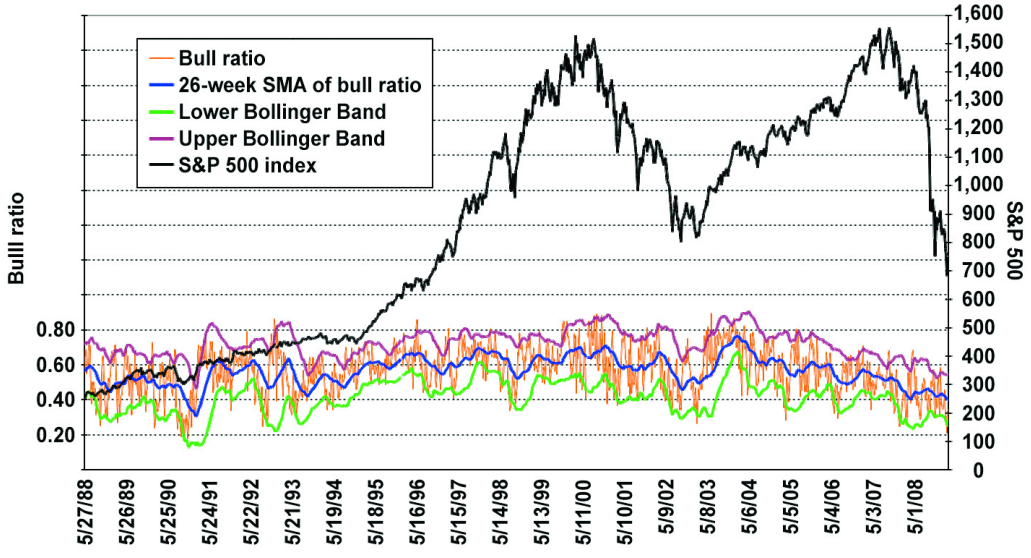
FIGURE 5: RECENT SIGNALS, 2002-2009



Again, the S&P 500 went nowhere after bullish AAII survey results over the past seven years. However, the market declined 1.65 percent following bearish readings during the same period (see Figure 1).

FIGURE 6: BULL RATIO VS. S&P 500 INDEX



To identify more extreme readings, we placed Bollinger Bands around the AAII survey's bull ratio. This approach generates signals when the bull ratio breaks above the upper band (bullish) and when it breaks below the lower band (bearish).

21-year period into three sub-periods.

Figure 1 (p. 14) shows a daily chart of the S&P 500 index from December 2007 to March 2009 and labels days on which bulls or bears dominated more than half the votes in the AAII survey. During this 68-week period, there were 22 bearish readings and only two bullish ones. In other words, the AAII survey was bearish roughly one-third of the time while the S&P 500 fell 49 percent. Contrarian traders who interpreted any of these points (except the last two) as buy signals would have lost a fortune.

Are AAII members more informed than analysts believe? Are contrarian signals less accurate during strong trends? If so, how can you identify times in which to trade with the AAII survey vs. against it?

To find some answers, let's first examine the S&P 500's historical performance after the AAII published weekly surveys in which bulls or bears captured more than half the vote since 1988.

Figure 2 (p. 16) shows the S&P 500's cumulative median moves from one to 11 days after extremely bullish and bearish surveys. To avoid overlap, only the first readings above 50 percent in the past month are considered. Because the AAII releases survey results before the market opens, the first day ("open to close") shows the market's same-day reaction, and days 2 to 11 show its performance in the following two weeks. The S&P's benchmarks, or typical same-length moves since 1988, are also shown.

After bullish readings exceeded 50 percent, the S&P 500 traded in line with its benchmarks, although the market fell slightly just after the news hit the Street. By contrast, stocks dropped a median 1.45 percent within two weeks of similarly bearish readings. Given the breathtaking plunge amid recent bearish calls in Figure 1, this decline isn't a surprise.

However, the market didn't begin to lose ground until the second week. By day 4, the S&P 500 gained 0.54 percent and beat its benchmarks after bearish results. But because the market points down in most other periods, day 4's bright spot is likely a fluke.

The seven-year itch

The market fell so sharply last year that it probably distorted overall post-survey performance. Before dismissing a contrarian approach to the AAII investor survey, let's break down the market's 21-year performance into three seven-year intervals: June

1988 to May 1995, June 1995 to May 2002, and June 2002 to March 2009.

Figure 3 (p. 16) shows the S&P 500's moves after bullish and bearish surveys only from 1988 to 1995. In the survey's early years, the market fell after bullish extremes and rallied after bearish ones. For example, the S&P slipped 0.20 percent on days in which the AAII announced bullish numbers, and it jumped 0.36 percent following the opposite results. The market sank another 0.40 percent by the second day after bullish sentiment, and it gained another 0.58 percent by the fourth day after bearish sentiment.

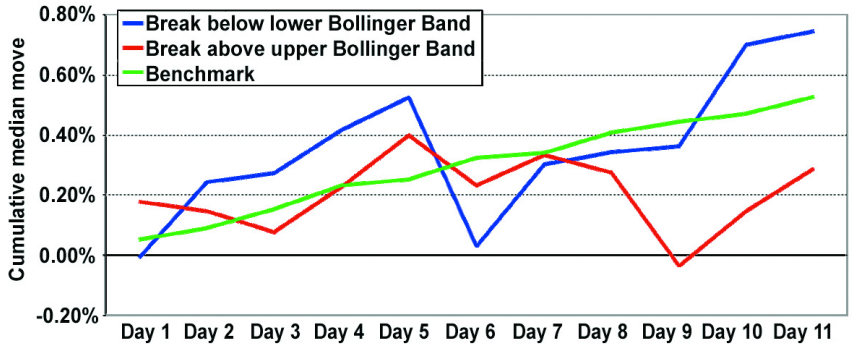
But those contrarian moves were interrupted. In the second week after bullish surveys, the S&P 500 gained more than 1 percent and beat its benchmarks. In the same period after bearish surveys, the market lost 0.46 percent and trailed its benchmarks. In short, extremes in sentiment failed to match market tops and bottoms, even in the AAII survey's infancy.

Figure 4 (p. 16) shows the market's behavior following bullish and bearish surveys from 1995 to 2002. Again, the S&P 500 slid 0.17 percent on days in which bullish surveys hit the Street. But that decline faded and the market traded sideways in the following 10 days. Not surprisingly, the weekly survey hit a bearish extreme only once in the years surrounding the Internet bubble (red line).

Figure 5 shows S&P 500's gains and losses after survey extremes from 2002 to 2009. In recent years, the market has tended to follow the survey's lead, rising slightly (albeit in line with benchmarks) after bullish readings, while dropping off a cliff after bearish ones. The S&P 500 declined 0.72 percent within two days of extremely bearish surveys, rebounded briefly, and then lost a total of 1.65 percent by day 11.

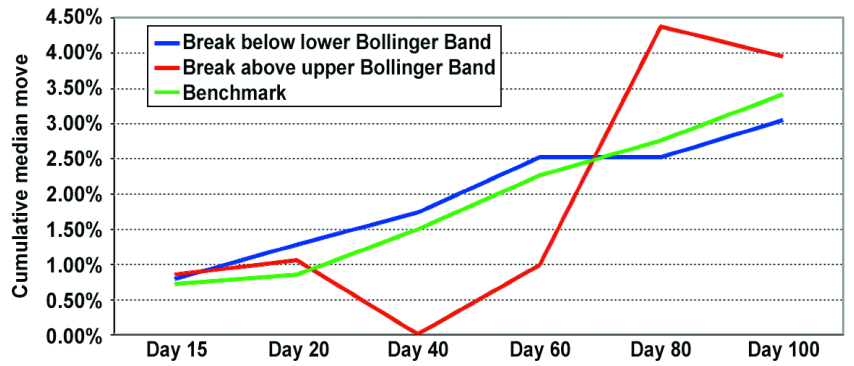
Figures 3, 4, and 5 show that interpreting extremes in the AAII survey hasn't been an easy way to make money. Initially, these signs acted as short-term contrarian signals, but that pattern died by 1995. And in recent years, it made more sense to take sentiment extremes at face value instead of fading them. These conclusions are confirmed by a recent academic paper published by German economists who compare the AAII survey's effect on the S&P 500 to their German equivalents.

FIGURE 7: AFTER BULL RATIO EXTREMES



After the bull ratio broke above its upper band, the S&P 500 gained 0.18 percent on the first day. However, the market lagged its benchmarks in the second week after these signals. On the other hand, the S&P 500 climbed 0.52 percent by the fifth day after the bull ratio fell below its lower band — a possible contrarian signal.

FIGURE 8: LONGER-TERM MOVES



The S&P 500 beat its benchmarks from the third week (day 15) to the third month (day 60) after the bull ratio dropped below its lower band (blue line).

AAII survey's bull ratio

This study hasn't yet found any noteworthy market patterns surrounding extremes in the AAII investor survey. But before we give up, let's examine investor sentiment from a different angle — the bull ratio, defined as follows:

Bull ratio = % bullish / (% bullish + % bearish)

The bull ratio measures the contribution of bullish investors in the context of investors on both sides of the market. Larger values show that bullish members dominate the survey, and smaller values show that bearish respondents are in control. On March 5, for example, 70.27 percent of surveyed members were bearish and just 18.92 percent were bullish — a bull ratio of 0.21 (18.92/ (18.92+70.27). Weekly bull ratio values ranged

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from 0.16 to 0.89 since May 1988.

One way to find extremely large (bullish) or small (bearish) bull ratio values is to identify readings that exceed specific limits such as 0.75 or 0.25. Another more dynamic approach is to apply thresholds that widen and narrow based on prior values. The study applied Bollinger Bands to weekly bull ratio values using a 26-week simple moving average (SMA) with lines 2 standard deviations above and below it.

Figure 6 (p. 18) shows a weekly S&P 500 chart (right axis) with Bollinger Bands applied to the bull ratio (left axis). Notice the weekly bull ratio rarely broke above its upper band or below its lower band. Breaks below the lower band indicate bearish sentiment, and breaks above the upper band imply bullish sentiment. Do these scenarios match market turning points?

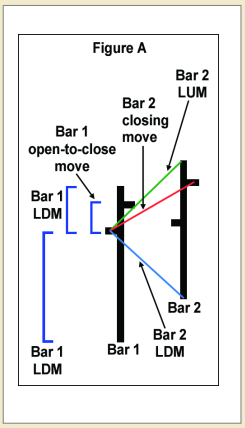
The search for market bottoms

Figure 7 (p. 19) shows the S&P 500's behavior in the two weeks after the bull ratio

Understanding the tables

Tables 1 and 2 summarize the price behavior for different pattern scenarios. Each table shows the average, median, maximum, and minimum price changes from:

1. The pattern's opening price to the closing price that same day ("Open to close").
2. The pattern's opening price to the same day's highest high ("Open to high").
3. The pattern's opening price to the same day's lowest low ("Open to low").
4. The pattern's opening price to the closing price of the next day ("Close").
5. The pattern's opening price to the next day's highest high (largest up move, or "LUM").
6. The pattern's opening price to the next day's lowest low (largest down move, or "LDM").



Also, the standard deviations (StDev) for the close-to-close changes are included, as well as the percentage of times the close-to-close change was positive ("%>0").

Figure A shows the close-to-close moves, LUMs, and LDMs from the first two bars.

TABLE 1: AFTER BULL RATIO LOWS

50 instances	Open to close	Day 1 Open to high	Open to low	Day 2	LUM	LDM	Day 3	LUM	LDM	Day 4	LUM	LDM
Avg:	-0.21%	0.63%	-0.85%	0.07%	0.93%	-1.25%	0.17%	1.28%	-1.44%	0.38%	1.46%	-1.65%
Med:	-0.01%	0.56%	-0.53%	0.24%	0.73%	-0.72%	0.27%	0.91%	-0.88%	0.42%	1.16%	-0.98%
Max:	2.37%	2.55%	0.00%	4.63%	4.96%	0.00%	5.70%	7.41%	0.00%	6.39%	7.83%	0.00%
Min:	-6.63%	0.00%	-7.21%	-4.28%	0.00%	-8.05%	-5.66%	0.00%	-8.05%	-5.17%	0.00%	-8.05%
StDev:	1.29%	0.56%	1.16%	1.50%	0.89%	1.49%	1.88%	1.30%	1.63%	1.87%	1.37%	1.78%
Pct. > 0:	48.00%			62.00%			60.00%			60.00%		

	Day 5	LUM	LDM	Day 6	LUM	LDM	Day 7	LUM	LDM	Day 8	LUM	LDM
Avg:	0.17%	1.64%	-1.83%	0.03%	1.75%	-2.01%	-0.13%	1.82%	-2.16%	-0.12%	1.92%	-2.39%
Med:	0.52%	1.21%	-1.12%	0.03%	1.35%	-1.30%	0.30%	1.43%	-1.54%	0.34%	1.54%	-1.78%
Max:	10.15%	10.15%	0.00%	11.21%	11.22%	0.00%	3.42%	11.22%	0.00%	5.33%	11.22%	0.00%
Min:	-5.14%	0.01%	-8.05%	-4.45%	0.01%	-8.05%	-6.70%	0.01%	-8.05%	-11.05%	0.20%	-11.20%
StDev:	2.24%	1.63%	1.84%	2.38%	1.75%	1.88%	2.01%	1.77%	1.95%	2.49%	1.77%	2.30%
Pct. > 0:	56.00%			52.00%			54.00%			52.00%		

	Day 9	LUM	LDM	Day 10	LUM	LDM	Day 11	LUM	LDM
Avg:	0.00%	2.01%	-2.48%	-0.10%	2.14%	-2.72%	-0.23%	2.28%	-3.04%
Med:	0.36%	1.63%	-1.78%	0.70%	1.76%	-1.92%	0.75%	1.98%	-2.01%
Max:	8.05%	11.22%	-0.04%	4.88%	11.22%	-0.04%	8.71%	11.22%	-0.04%
Min:	-11.62%	0.20%	-12.13%	-9.67%	0.20%	-12.13%	-13.37%	0.20%	-13.96%
StDev:	2.93%	1.79%	2.38%	3.05%	1.82%	2.59%	3.77%	1.80%	2.94%
Pct. > 0:	62.00%			62.00%			60.00%		

These statistics suggest the market's initial strength after weak bull ratios isn't as solid as it appears in Figure 7. LDMs are larger than LUMs during this period, a sign of weakness.

exceeded its upper and lower bands from May 1988 to March 2009. The S&P 500 was basically mixed following both patterns, although the market jumped 0.52 percent within five days of a break below the bull ratio's lower band. By day 10, the S&P climbed 0.75 percent and beat its benchmarks after bull ratio lows, while lagging its benchmarks after bull ratio highs.

Although not perfect, the bull ratio found more reliable patterns than the survey's individual components. Figure 8 (p. 19) compares the market's longer-term performance after the bull ratio broke beyond its upper and lower Bollinger Bands. After the bull ratio fell, the S&P 500 consistently beat its benchmarks from day 15 to 60. By contrast, the market lacked direction after the bull ratio climbed.

Tables 1 (p. 20) and 2 (p. 21) list the market's performance statistics following bull ratio breaks beyond its lower and upper bands, respectively. According to Table 1, the market gained ground after the bull ratio sank, but its performance from days 1 to 4 wasn't as strong as Figure 7 implied.

For example, average values are lower than their median counterparts, and LUMs are similar to LDMs — signs of a weak or stagnant market. More importantly, the market's rebound on days 10 and 11 is misleading as average moves point in different

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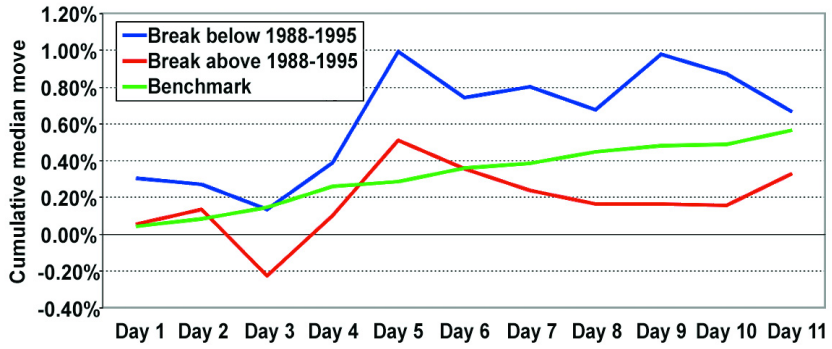
FIGURE 9: EXPECTED MOVES IN EARLIER YEARS



The S&P 500 moved in the opposite direction of the AAII survey in the first few years after it began publishing results. After the bull ratio fell, the market jumped 1 percent within five days. By contrast, the S&P lagged its benchmark after the bull ratio leapt.

TABLE 2: AFTER BULL RATIO HIGHS

44 instances	Day 1 Open to close	Day 1 Open to high	Day 1 Open to low	Day 2	LUM	LDM	Day 3	LUM	LDM	Day 4	LUM	LDM
Avg:	-0.01%	0.56%	-0.64%	0.11%	0.82%	-0.82%	0.01%	1.03%	-1.08%	0.01%	1.17%	-1.33%
Med:	0.18%	0.50%	-0.35%	0.15%	0.57%	-0.38%	0.08%	0.79%	-0.60%	0.23%	0.86%	-0.71%
Max:	2.24%	2.24%	0.00%	3.38%	3.38%	0.00%	2.71%	3.93%	0.00%	3.51%	3.93%	0.00%
Min:	-4.99%	0.00%	-5.53%	-3.31%	0.00%	-5.53%	-4.12%	0.00%	-5.72%	-5.61%	0.00%	-7.09%
StDev:	1.11%	0.48%	1.00%	1.41%	0.82%	1.12%	1.53%	0.99%	1.43%	2.00%	1.08%	1.69%
Pct. > 0:	59.09%			59.09%			52.27%			54.55%		

	Day 5	LUM	LDM	Day 6	LUM	LDM	Day 7	LUM	LDM	Day 8	LUM	LDM
Avg:	-0.07%	1.37%	-1.56%	0.06%	1.52%	-1.89%	-0.18%	1.72%	-2.08%	-0.50%	1.82%	-2.23%
Med:	0.40%	1.04%	-0.76%	0.23%	1.04%	-0.84%	0.33%	1.37%	-0.92%	0.28%	1.45%	-1.07%
Max:	3.67%	3.93%	0.00%	5.12%	5.22%	0.00%	6.29%	6.45%	0.00%	6.36%	6.51%	0.00%
Min:	-10.51%	0.00%	-10.70%	-6.84%	0.00%	-14.04%	-8.31%	0.00%	-14.04%	-11.10%	0.00%	-14.04%
StDev:	2.62%	1.16%	2.18%	2.39%	1.35%	2.73%	3.05%	1.53%	2.83%	3.53%	1.64%	2.95%
Pct. > 0:	56.82%			56.82%			56.82%			59.09%		

	Day 9	LUM	LDM	Day 10	LUM	LDM	Day 11	LUM	LDM
Avg:	-0.32%	1.88%	-2.29%	-0.49%	1.96%	-2.39%	-0.48%	2.09%	-2.61%
Med:	-0.03%	1.46%	-1.11%	0.15%	1.46%	-1.20%	0.29%	1.61%	-1.20%
Max:	6.42%	6.80%	0.00%	5.97%	6.80%	0.00%	6.85%	7.10%	0.00%
Min:	-9.79%	0.00%	-14.04%	-15.31%	0.00%	-15.35%	-21.00%	0.00%	-21.48%
StDev:	3.17%	1.69%	2.98%	3.78%	1.73%	3.11%	4.50%	1.83%	3.79%
Pct. > 0:	47.73%			52.27%			56.82%		

After the bull ratio exceeded its upper band, the market basically went sideways. These numbers show a market without a trend.

directions and LDMs are larger than LUMs. Similar problems appear in Table 2.

Dividing performance into subperiods

To resolve lingering doubts about the bull ratio's efficacy, the final section divides post-pattern S&P performance into seven-year intervals: June 1988 to May 1995, June 1995 to May 2002, and June 2002 to March 2009.

Figure 9 (p. 21) shows how the S&P 500 behaved after the bull ratio moved beyond its upper and lower Bollinger Bands from 1988 to 1995. The market gained ground after the bull ratio dipped below its lower band, and it lagged its benchmarks after the ratio broke above its upper band. For example, the S&P rose 0.30 percent on the day the bull ratio plunged, and it climbed another 0.70 percent within four days.

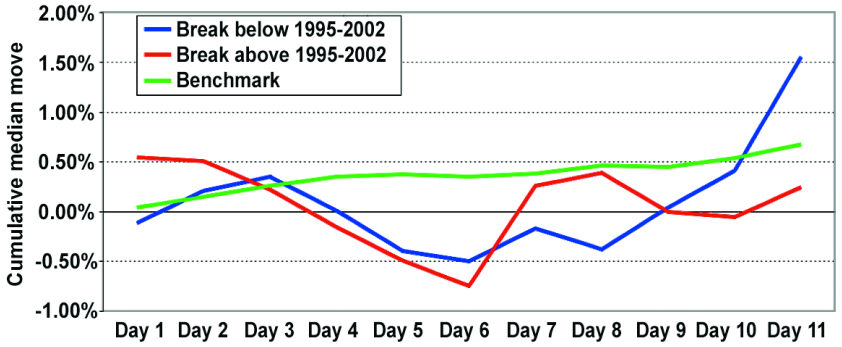
On the other hand, the market held below its benchmarks during eight of the 11 days after the bull ratio exceeded its upper band.

Figure 10 shows the S&P 500's post-pattern moves from 1995 to 2002 and tells a different story. The market sank at least 0.50 percent by day 6, regardless of which direction the bull ratio moved.

Figure 11 compares the market's moves after extremely large and small bull ratio values since 2002. In recent years, the market lacked direction following these signals. But if you compare Figure 11 to Figure 5 (p. 18), it is clear weak bull ratio readings identify market bottoms better than waiting for the AAII survey's bullish category to exceed 50 percent. In other words, historically low bull ratio values may not have preceded big rallies, but at least you won't have caught a falling knife.

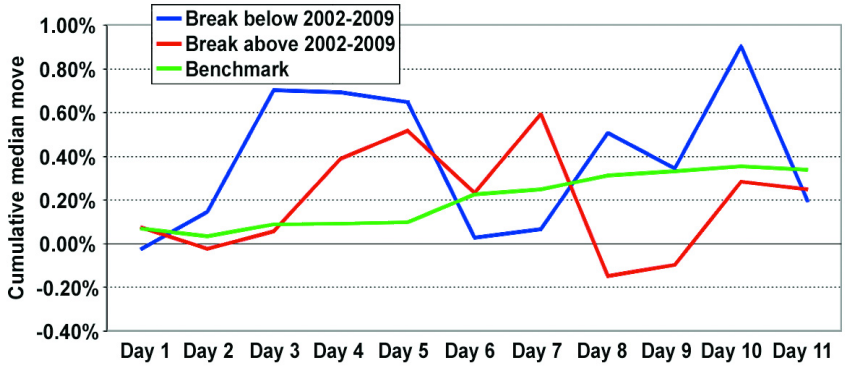
Gauging investor sentiment isn't an exact science. And the AAII survey is just one of many ways you can measure the market's overall mood, including put/call ratios, short interest, analyst coverage, the CBOE Volatility (VIX) index, and other surveys from Consensus Inc., Investor's Intelligence, and Market Vane.

FIGURE 10: LACKLUSTER PERIOD, 1995-2002



Overall, the S&P 500 lagged its benchmark after bull ratio extremes from June 1995 to May 2002, although it bounced back in the 10th day after weak bull ratio readings.

FIGURE 11: RECENT MIXED PERFORMANCE



In recent years, extreme bull ratio readings haven't led to consistent S&P 500 moves, although the market still jumped 0.70 percent within two days of weak readings, matching its typical performance following these events since 1988.

Related reading

"The put-call ratio as a contrarian indicator"
Active Trader, March 2006.
Many traders believe the put/call ratio's extremes signal market turning points, but interpreting this indicator isn't that simple.

"The composite sentiment index"
Active Trader, October 2002.
This article uses a sentiment indicator created from different sentiment surveys to find trend changes.

"Going against the crowd"
Active Trader, November 2000.
The put-call ratio has long been used as a measure of market sentiment. Here's a new twist on an old approach that can help you catch turning points based on short-term put-call extremes.

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