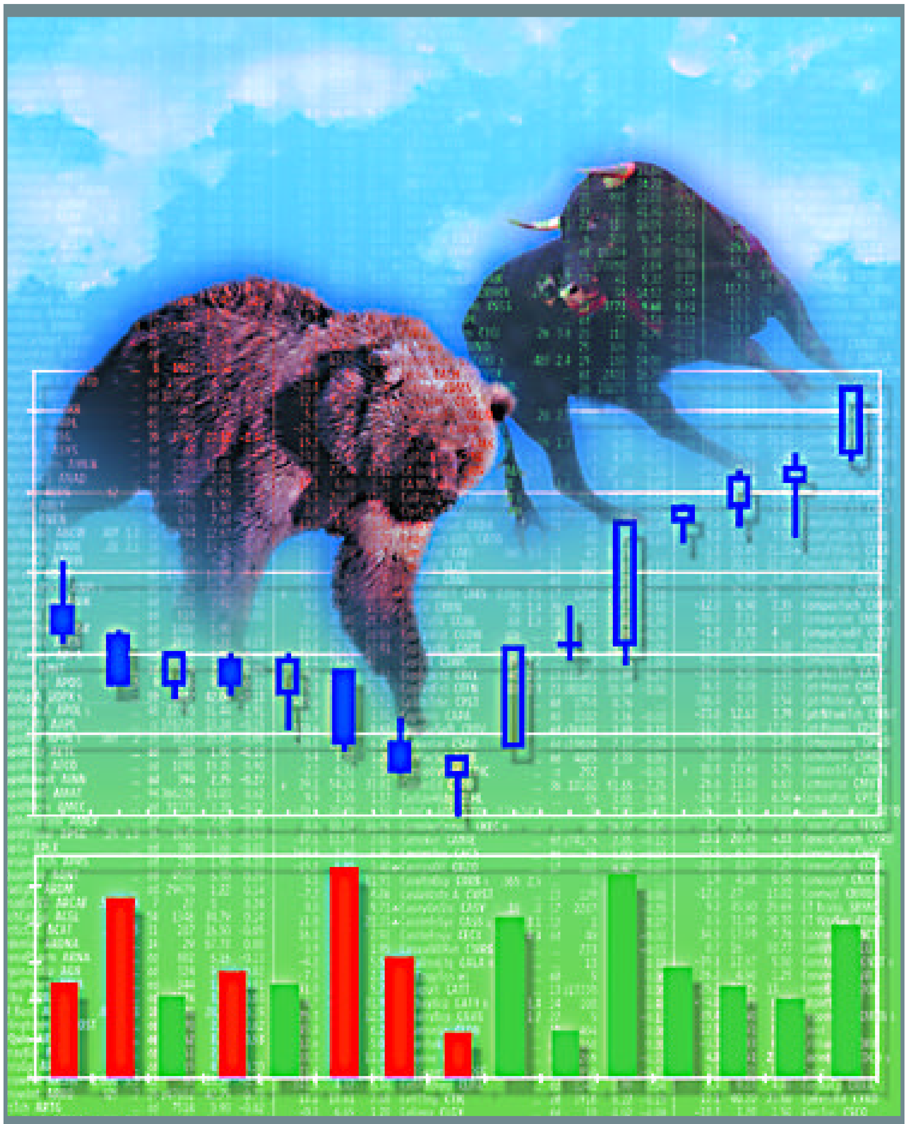
Relative VOLUME analysis

Traders commonly use total volume to take the pulse of price moves, but when it comes to determining whether the bulls or bears are in charge of the market, up and down volume speak volumes.



BY THOM HARTLE

Volume has always been a component of classic technical analysis. For example, one of the precepts of trend analysis is that volume should increase in the direction of the longer-term trend and decrease during countertrend moves.

Expanding volume during a price move implies many market participants are driving the price action, confirming the trend. If volume does not increase, the move is suspect because of the lack of commitment implied by the weak volume.

Although basic volume analysis can be useful, there's more to volume than first meets the eye. End-of-day volume figures are comprised of the volume for stocks that are up (above the previous close), down (below the previous close) and unchanged on the day. More so than total volume, up volume and down volume can provide additional insight about the direction of the stock market.

Dividing the up-volume and down-volume numbers for each day by the total volume (not counting unchanged volume) gives the percentage of the day's volume attributable to stocks that are trading up or down. These percentages aid analysis by revealing the degree of buying or selling taking place at a specific time, such as when price is challenging a support or resistance level.

The following examples analyze end-of-day up-volume and down-volume statistics in the S&P 500 index (see Figure 1, opposite page). Candlestick charts are used to highlight whether a particular day closed above the opening price (a white candle) or below the opening price (a black candle). Below the price candles are green and red volume bars that reflect the relative up or down volume.

Bar-by-bar breakdown

Figure 1 shows the percentage of volume that was up (green bars) or down (red bars) — whichever was greater relative to the combination of up and down volume for the day.

The first basic principle of this analysis is that during an uptrend, the up-volume (green) bars will generally be higher than the immediately preceding down-volume (red) bars. In Figure 1, which is characterized by rising prices, the majority of the green volume bars are higher than the red volume bars, a clear sign of an uptrend.

Bars 2 through 5 are all green, and bar 3 reached 90 percent, which means nine out of 10 shares traded that day were in stocks up on the day, a sign of strong demand. Candles 2-5 accounted for the largest uninterrupted up move on the chart.

Candle 6 was an inside day that closed lower than the open. The down volume that day was just less than 85 percent of the day's total up-down volume. That this down-volume bar was slightly lower than the previous up-volume bars suggests candle 6 is just a correction, or pause, in the uptrend. Had the red-volume bars been larger than the previous green-volume bars, a reversal would have been more likely.

The market advanced further during candles 7, 8 and 9, but their up-volume bars were all lower than candle 6's down-volume bar, and up-volume bar 9 was lower than previous up-volume bars 3 and 5. This means the up-volume percentage was dropping off and the higher prices were not attracting that much additional buying; the market was becoming more balanced, with many stocks up and many others down.

The S&P made a new high (for the period shown on the chart) at candle 14, but this upside breakout failed and the index closed down for the day. However, its down-volume bar is lower than the previous up-volume bars. Candle 15's low broke below the immediate support level established by bars 11, 12 and 13, but it closed back above this level; again, the down-volume bar was still lower than the most recent up-volume bar.

The lack of high-percentage down volume in this context implied the longer-term uptrend is still intact. Generally, the down-volume bars would be starting to dominate in such a situation if the market was going to break down. However, volume bars 16 and 17 in this emerging trading range were dropping.

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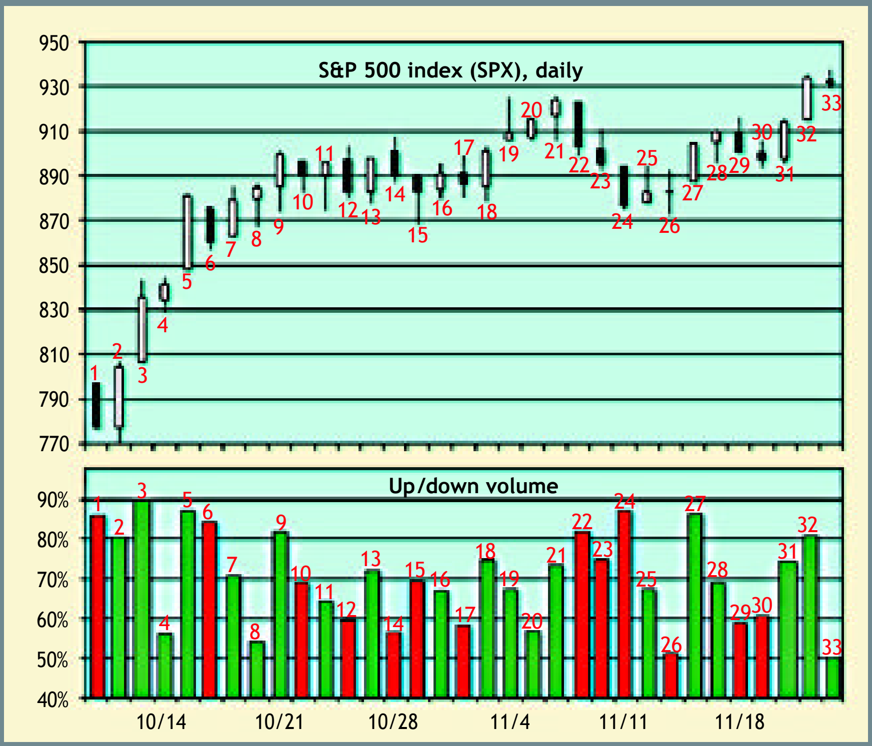
FIGURE 1 RELATIVE VOLUME

The green and red volume bars show the percentage of volume that was up or down, respectively, on a given day.



Source: Excel

Relative volume reveals the degree of buying and selling taking place at a specific time, such as when price is challenging a support or resistance level.

Candle 18 was an up day, and its up-volume bar was the highest in the previous eight days, a sign buyers were coming back into the market after the test of support. But as the market started to climb, the up-volume bars trended down: bars 19, 20 and 21 were all lower than bar 18. Conclusion: The higher prices were attracting sellers in the background.

Candle 22 opened and reversed at the high of the recent trading range, closing below the lows of candles 19, 20 and 21. But more importantly, volume bar 22 was the highest of the last 12 volume bars, which meant sellers were asserting control in the market. The S&P subsequently tumbled to the support level (at candle 24) and the down-volume bars were higher than the recent up-volume bars.

The high down-volume percentages at the test of support would indicate a strong likelihood the market would drop below this level. However, although candle 26 took out candle 24's low, the market recovered. Also, the down-volume percentage for this bar was the lowest on the chart (barely above 50 percent), which means sellers were not participating aggressively at this level — they had already sold. This evidence points to a potential upside reversal.

The next day, candle 27, marked another advance, with an up-volume bar substantially higher than the previous down-volume bar. Candle 28 also moved higher, but its volume bar was lower than that of bar 27. Candles 29 and 30 moved lower, but their down-volume bars were lower than the previous two up-volume bars, which meant the sellers were still not in control and this move was likely a correction in the overall uptrend. Candles 31 and 32 were bullish candles with relatively strong up volume (increasing up-volume bars).

This chart supports the general idea that up volume will dominate down volume in an uptrend. The key sign of an uptrend, though, is the relatively low down-volume percentage during corrections.

Let's now look at how the volume can reverse as the market forms a short-term top.

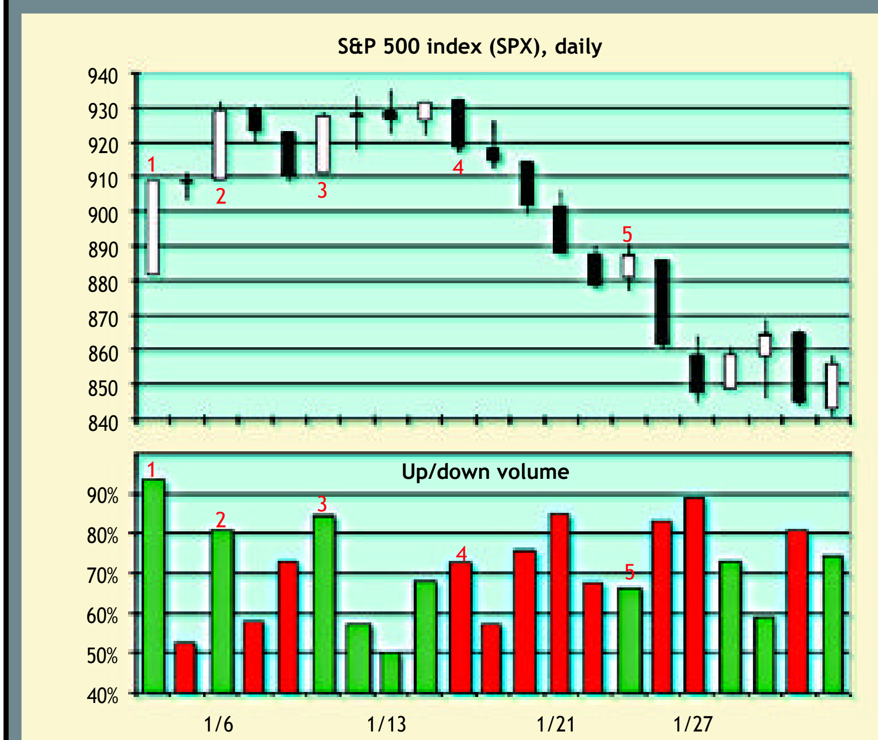
Reversal signal

Figure 2 (below) shows the S&P 500 during January 2003. Candles 1, 2 and 3 all had strong up-volume bars; the intervening down-volume bars were much lower, all of which underscored bullish price-volume action.

However, as the market tested resistance around 930 after candle 3, the up-volume percentage dropped off, indicating selling was occurring in the back-

FIGURE 2 CHANGING OF THE VOLUME GUARD

As the market tested resistance around 930, the up-volume percentage dropped off (between bars 3 and 4), hinting at background selling.



Source: Excel

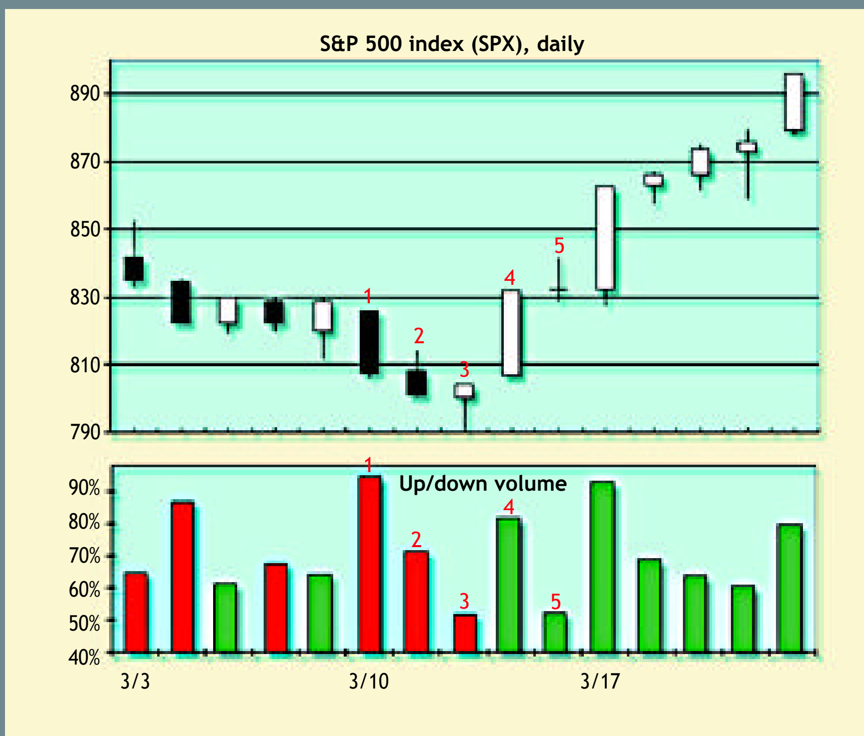
ground. Candle 4 closed below the low of the previous two days on a higher down-volume percentage than the three previous up-volume days — a sign sellers were coming into the market.

The market moved steadily lower over the next few candles on a rising percentage of down volume. Candle 5 was an up day, but the up-volume bar is lower than the previous down-volume bars — a negative sign. Subsequently, the market continued to trend down, with high percentage down-volume days and low percentage up-volume days.

The final example illustrates the reversal of a downtrend. Figure 3 (above) shows the S&P 500 and its up and down volume percentages for the first few weeks of March 2003. From March 3 through March 12, the market was trending lower, with the down-volume percentages dominating the up-volume percentages. On March 10 (candle 1), the down volume was above 90 percent. However, candle 2 and candle 3's down-volume percentages dropped even as price continued to fall. In other words, the lower prices were not bringing more sellers into the market. Candle 3 made a new low but reversed to close above its open, hinting the market was vulnerable to a short-covering rally.

FIGURE 3 BOTTOM REVERSAL

As the market bottomed out at candles 1, 2 and 3, the corresponding down-volume bars shrank.



Source: Excel

Candle 4 was a big up day. The up-volume bar was much higher than the down-volume bars of the two previous down days. Bar 5 is more ambiguous. The market closed above the 830 resistance level established during the previous week but the up-volume percentage was low, reflecting uncertainty. The next day, though, the market started to advance, and by the end of the day the high up-volume percentage (over 90 percent) confirmed the up move and alerted traders to the potential for additional gains.

However, notice the up-volume bars began to decline at this point, similar to the way the down-volume bars for candles 2 and 3 did when the market reversed to the upside. The two situations have an important difference, though: Candle 4's up-volume bar was substantially higher than candle 2 and 3's down-volume bars. You must be able to compare up-volume bars to down-volume bars (or vice versa) — not up-volume to up-volume or down-volume to down-volume — before drawing any conclusions about potential reversals. Therefore, until the market made a correction following the rally that began at candle 4, you must assume the trend is still up.

The key to this analysis is that countertrend volume patterns indicate whether the trend is up or down. Low down-volume bars indicate the trend is up. Low up-volume bars indicate the trend is down.

Trade influence

Price-volume analysis is a useful barometer of the market environment. If your analysis in a market indicates the principles outlined here are in effect, consider executing your strategies in the direction of the trend indicated by the volume patterns — i.e., if the up-volume bars are green and the down-volume bars are red, long positions are likely to perform better than short trades.

One thing to keep in mind is that it is always possible that news can trigger major buying or selling and reverse the trend. However, following the percentage of up-volume and down-volume relative to the total up-down volume during a trend (and at key support and resistance levels) can help clarify whether the bulls or the bears are dominating the market at a given moment.

For information on the author see p. 10.