



A Different Perspective

The Breakout Relative Strength Index

It's not easy to determine if the price of a stock is about to break out. Here's one way you can determine the relative strength of a breakout, enabling you to act early and realize higher profits.

by Howard Wang



The term “breakout” is well known among those who follow price charts. It's a simple concept, but the occurrence of a breakout causes a lot of excitement among technical analysts. It's the first sign of the

beginning of a trend or trend reversal. An equity you have been following may have been moving in a trading range between support & resistance levels for a few months and suddenly price breaks out from that range with increased volume. But even that is no guarantee that the stock will start moving in an uptrend or downtrend. How do you determine if the breakout is about to happen, and how do you determine the relative strength of the breakout? There's no easy method, and this is what led me to find a way to identify the hidden breakout factors that arise from fluctuating stock prices. Then, of course, if you know a breakout is about to happen, you

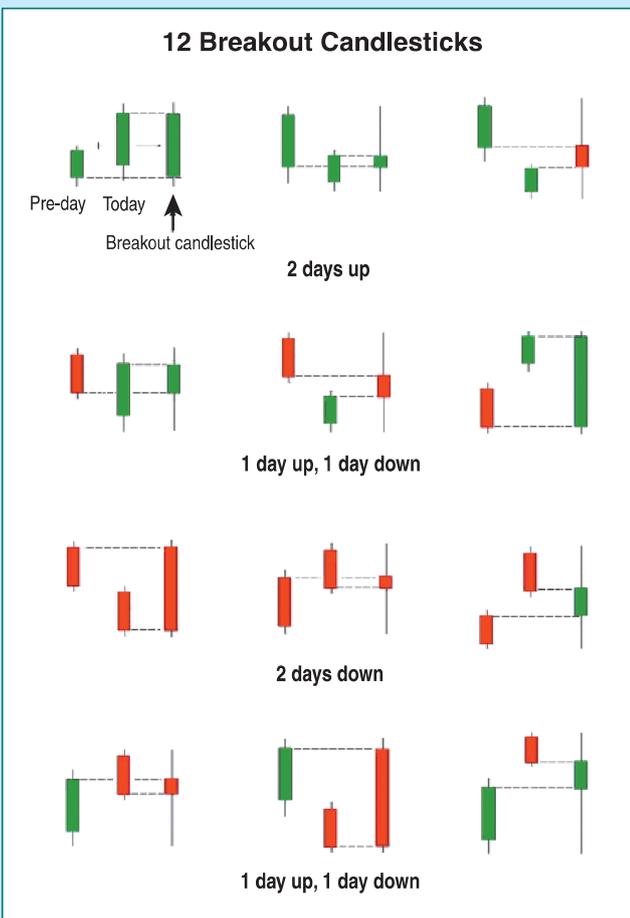
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IDENTIFYING BREAKOUT CANDLESTICKS

The breakout candlestick's high, low, open, and close are identified with the following characteristics:

- High is higher than the high of the last two days
- Low is lower than the low of the last two days
- If there are two up days or two down days, then the open is the pre-day's open, and the close is today's close
- If there is one up day and one down day, then the open is the pre-day's close and the close is today's close.

The 12 different breakout candlesticks are displayed in Sidebar Figure 1.



SIDEBAR FIGURE 1: BREAKOUT CANDLESTICKS. Here you see 12 possible candlestick breakouts.

want to act early. This led me to create the *breakout relative strength index* (BRSI).

WHAT MAKES IT UNIQUE?

The only difference between the BRSI and the relative strength index (RSI) is in its calculation. The RSI does not incorporate volume and price range in its calculations, so in the BRSI, I incorporated these two variables to make it more intuitive

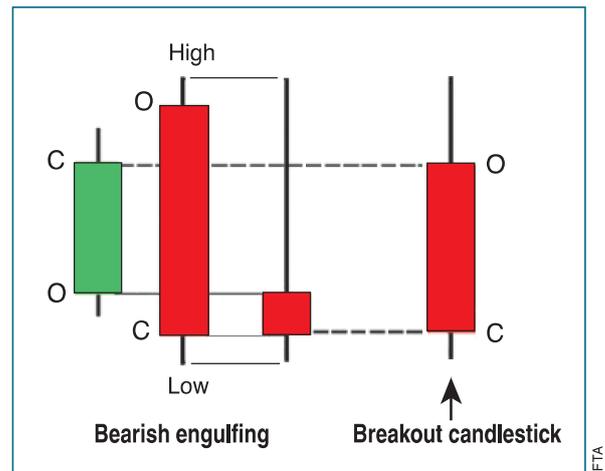


FIGURE 1: BEARISH ENGLUFING VS. BREAKOUT. The difference between the bearish engulfing pattern and the breakout candlestick is that different open prices are used.

and effective in determining the relative strength of breakouts. BRSI provides a new method of technical analysis, fills a gap in technical analysis, and is more convenient for traders who want to find potential trading opportunities.

CALCULATING BRSI

As you may have guessed, the calculation of the BRSI is influenced by the breakout candlestick. This breakout candlestick is a blended candlestick (see the sidebar "Identifying Breakout Candlesticks" for the different ways to identify the breakout candlestick). BRSI is calculated by using average prices, range size, and mixed volume of the breakout candlestick. (See the sidebar "Calculating The Relative Strength Index (RSI)" for details on how to detect the breakout candlestick.) Since BRSI determines the relative strength of the breakout, it identifies whether a security is overbought or oversold. But in addition to that, it shows the status and strength of stock prices at the time the breakout occurred.

BRSI ranges from zero to 100. If BRSI is over 80, it means the breakout is strong, the stock is overbought, and it is likely the price will move down. If BRSI is below 20, it means the breakout is weak, the stock is oversold, and the price is likely to move up. The middle value, 50, is the strength boundary, which is a holding signal.

WHAT IS A BREAKOUT CANDLESTICK?

A breakout candlestick is a blended candlestick. I say "blended" because it combines two original candlesticks based on a specific method. It is different from the blended candlestick method described in Steve Nison's classic book, *Beyond Candlesticks*. I have modified the blending and created a blended candlestick using the concept of breakout and relative strength.

In Figure 1, I compare the difference between the bearish engulfing method and breakout candlestick. The candle on the left is Nison's blended candlestick and the one on the right is the breakout candlestick. You can see there is a difference



FIGURE 2: BREAKOUT RELATIVE STRENGTH INDEX (BRSI) AND BREAKOUT CANDLESTICK. Here you see the BRSI is in an overbought zone and the breakout candlestick is indicating prices will move lower. This is a strong sell signal.

between the two types of combinations—they use a different open price. The breakout candlestick is more in line with stock price movement and shows a stronger down movement compared to the bearish engulfing pattern. It also better reflects the nature of market behavior.

A blended candlestick is not a candlestick bar that you would typically view on a chart. It is an analysis method that closely matches the price fluctuations taking place in the financial markets.

ANALYSIS

BRSI provides a unique and intuitive way of looking at breakouts. In the chart of the SPDR Dow Jones Industrial Average ETF (DIA), SPDR S&P 500 ETF (SPY), and PowerShares QQQ ETF (QQQ) in Figure 2, you see that the price of the three ETFs hits a new high on March 2, 2015. However, a sell short signal appeared on February 27, 2015 when the BRSI was in an overbought zone and the breakout candlestick indicated a downward move, so it automatically placed a short order in our trading account.

The BRSI gives a clear view of the market. If it acts in concert with a breakout candlestick, you'll be able to earn larger profits while decreasing your risks.

Howard Wang has a master's degree in mathematics and economic statistics, and has over 20 years of investment experience. He is particularly interested in analyzing technical indicators, candlestick construction, and designing breakout trading software and automated trading systems. He may be reached at tradesoftusa@yahoo.com.

FURTHER READING

Nison, Steve [2009]. *Beyond Candlesticks: New Japanese Charting Techniques Revealed*, John Wiley & Sons.

The indicator incorporates volume and price range in its calculations, which makes it more intuitive and effective in determining the relative strength of breakouts.

CALCULATING THE BREAKOUT RELATIVE STRENGTH INDEX (BRSI)

The BRSI calculation is based on the breakout candlestick and uses price, range%, and two-day volume of the breakout candlestick.

$$\text{Breakout price} = (\text{Open} + \text{High} + \text{Low} + \text{Close}) / 4$$

(Note: The open, high, low, and close are based on the breakout candlestick)

$$\text{Breakout volume} = \text{Sum of volume of the last two days}$$

$$\text{Breakout strength} = \text{range\%} = (\text{Close} - \text{Open}) / (\text{High} - \text{Low})$$

(Note: Range% can be positive or negative)

$$\text{Breakout power} = \text{breakout price} * \text{range\%} * \text{breakout volume}$$

If breakout power > pre-day breakout power then it is positive power

$$P = \text{Sum of positive power in 14 days}$$

If breakout power < Pre-day breakout power, it is known as negative power

$$N = \text{Sum of absolute value of negative power in 14 days}$$

(Note: When comparing breakout power, the positive and negative values are used, but when calculating P and N, absolute value is used.)

$$\text{Breakout ratio} = P/N$$

$$\text{BRSI} = 100 - (100 / 1 + \text{Breakout ratio})$$

—H. Wang

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