Identifying Trading Opps

Buy & Sell Signals Using Stochastics

Combining moving averages with stochastics can generate reliable buy and sell signals. Find out how you can use them to identify attractive trading opportunities in stocks and ETFs.

by Chris Pratsch

Many technical analysis indicators are based on complex mathematics that only seasoned mathematicians can handle, and sometimes even they can fail. Unfortunately, higher mathematics are required to handle intricate statistical formulations needed for large volume trades.

The single trader, however, for whom much smaller stock volume is available, cannot participate in such large trades. These single traders — and I consider myself to be part of such a group — can only react to market moves that, with or without influences from outside forces, gyrate in irregular cycles.

JOHN NEBRASKA

WHICH INDICATORS DO YOU USE?

The task here is to use technical indicators that describe price moves and have maximum forecasting power. Fortunately, quite a number of useful and valid indicators are available. They are simple to use, mathematically correct, and often are well displayed and easy to handle by normal trading platforms.

I will discuss using moving averages and stochastics in a number of combinations. You will be able to see how valuable

buy & sell signals can be established and, when followed, form a basis for attractive trading activities of stocks and exchange traded funds (ETFs) by single traders.

MOVING AVERAGES

My basic demand for an indicator is for it to describe and signal price trends. Trend following is a key condition for successful trading. For this purpose, moving averages are quite useful; they are simple to select, simple to understand, and simple to define the current trend.

Less simple is the selection of specific moving average values; 20-, 50-, and 200-tick moving averages are common, with exponential moving averages (EMAs) used in cases of values higher than 20. The selected values must conform to the user's trading strategies. The longer the moving average value, the later a signal will be obtained; this means that larger losses in falling price trends and later entries in rising price trends will occur.

Buy and sell signals are obtained by using crossovers of price and moving average or of two moving averages. The shorter the moving average values, the more precise the resulting signals.

I am using simple moving averages (SMA) 6, 11, and 16. Brokerage houses typically use moving averages of 50 and 200 with corresponding results. Actually, there is no "best" moving average value; the much-used values of 20, 50, and 200 become important only by the action of cycles. If everyone believes MA 67 is important, it will become important when everybody uses this signal.

A "right" moving average may be selected from a Guppy chart. It is formed by multiple exponential moving averages (EMAs) from three to 60; it allows you to define price trends and select buy and sell signals. Detailed descriptions of the Guppy chart can be found on the Internet (see the "Suggested reading" at the end of this article for related S&C articles).

It is important to have the price signs (line, bars, candlesticks) above the selected moving average line in a price uptrend. But it is also important to have a moving average line that is trending upward at the same time if you want a rising price trend. In fact, I rarely if ever buy or hold a stock or ETF whose SMA 16 does not trend upward. A good signal for such a basic condition is given in the Worden TCNet (TC2000) system by the formula

(avgc16.2 < avgc16.1) and (avgc16.1 < avgc16)

This allows you to sort any watchlist for stocks that trend upward. By changing the directional signs, we can formulate a practical formula to sort watchlists for stocks trending downward:

(avgc16.2 > avgc16.1) and (avgc16.1 > avgc16)

Moving averages are trend followers; they hardly give us forward views other than by hoping an established trend will persist or change. This is quite different from the stochastics signal.

STOCHASTICS

The term "stochastics" seems to be a true misnomer; in reality, the concept is a mathematically well-defined ratio of price data in the form of

C-LL/H-LL

where:

- C is the closing price
- LL is the lowest price inside the time window selected
- H is the highest price in the time interval selected.

The resulting signal line shows cyclic moves between values of zero (low) and 100 (high). The textbook notion that the stochastics value of 80 and higher is a time of "overbought"' and under 20 as "oversold" are useless as the signal values depend on the time window selected. In addition, for some unknown reason, textbooks only discuss stochastics values of stoch 14.4 and never discuss the use of multiple-length stochastics. In fact, for time windows longer than about 20 ticks, high and low stochastics values may be present for considerable times (weeks and months) giving no buy or sell signal by themselves. Stochastics signals consist of two parts:

a The position of the stochastics signal line in respect to its SMA: When the signal line lies above its SMA, the trend is up. If the signal line lies below its SMA, the trend is down.

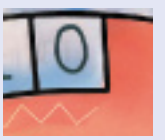
b The value of the signal line is this. In an uptrend, low values have more potential for a buy because there seems to be more time available until the signal line is high up and ready to turn down. In a low trend, the signal line should be at a high value so that a considerable length of time is present for the price to drop further.

"Isn't it great to get away from it all!"

TONET (WORDEN)

FIGURE 1: APACHE CORP. (APA). Moving averages in the upper-chart window (SMA 6, 11,16) are combined with variable-length stochastics (stochastics 6,2,2 and 12,3,3 in the middle window, stochastics 30,4,5 and TSV-time segmented volume 17,9 in the lower window). Buy signals are clearly seen in early October 2011, late December 2011, and early June 2012; sell signals are shown in mid-November 2011 and early March 2012.

A signal including volume data may be added in order to have a well-rounded approach.



I use the stochastics setting of stoch 30, 4, 5 as buy & sell signals. On the daily chart of Apache Corp. (APA) in Figure 1, 30 is the length of the time window selected, 4 is an internal smoothing moving average of stoch 30, and 5 is a SMA 5 for the stochastics signal stoch 30, 4.

A few years ago, I found this setting to be very profitable with funds; however, stocks are more volatile and need some kind of warning, or a shorter time setting. In order to get such an early warning, I also plot stochastics signals of 12, 3, 3 and of 6, 2, 2. They can be used as trigger or warning for the stoch 30, 4, 5 signal, or they can be used directly as buy and sell signals.

This approach is backed up by the rule that, since stock prices fall faster than going up, you should use longer time settings in any indicator selection in uptrending times than downtrending times (use stoch 30, 4, 5 to buy, use stoch 12, 3, 3 to sell). Buy signals are clearly seen in early October 2011, late December 2011, and early June 2012; sell signals are shown in mid-November 2011 and early March 2012.

It is interesting to note that stoch 6, 2, 2 setting simulates the timing of directional index signals +DI and -DI, the backbone of the average directional index (ADX) signal set up. Thus, buy and sell signals can easily be formulated by using stoch 6, 2 values. The signal stoch 12, 3, 3 seems favorable for swing trades of days' and weeks' length.

In Figure 2, on the daily chart of ProShares UltraShort

FIGURE 2: PROSHARES ULTRASHORT DOW30 ETF (DXD). Moving averages in the upper-chart window (SMA 6, 11, 16) are combined with variable-length stochastics (stochastics 6,2,2 and 12,3,3 in the middle window, stochastics 30,4,5 and TSV-time segmented volume 17,9 in the lower window). A major buy signal is shown in early May 2012, sell signals in early October 2011, and early June 2012.

Dow30 (DXD), you see the six-, 11-, and 16-period moving averages combined with variable-length stochastics and time segmented volume (TSV). In early May 2012, a major buy signal is given and sell signals are given in early October 2011 and early June 2012.

SIMPLE AND PRACTICAL

A system formed by moving averages on the upper price chart and multiple time-length stochastics on additional chart windows proves to be a practical method to find buy & sell signals. When we use the underlying formulas of these stochastics settings to sort watchlists, we obtain very quickly and correctly such buy and sell signals. A signal including volume data may be added, like volume bars, time segmented volume (TSV) or others, in order to have a well-rounded approach.

Chris Pratsch is a retired petroleum geologist and has also been an independent trader since 1966. He uses several trading platforms, mainly Worden TeleChart, Fidelity Trader, and Scottrade Elite, besides several Internet-derived free data services. After a long period in fund trading, he now concentrates on stocks and ETFs. He may be reached at jcp@hal-pc.org.

SUGGESTED READING

Guppy, Daryl [1998]. "Using Multiple Moving Averages," *Technical Analysis of* STOCKS & COMMODITIES, Volume 16: February.

_____, and Chen Jing [2008]. "Parallel Listings And True Price Value," *Technical Analysis of* STOCKS & COMMODITIES, Volume 26: May.

‡TCNet (Worden)