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Chart School

StochRSI

Overview

Developed by Tushard Chande and Stanley Kroll, StochRSI is an oscillator that measures the level of RSI relative to its range, over a set period of time. The indicator uses RSI as the foundation and applies to it the formula behind Stochastics. The result is an oscillator that fluctuates between 0 and 1.

In their 1994 book, **The New Technical Trader**, Chande and Kroll explain that RSI sometimes trades between 80 and 20 for extended periods without reaching overbought and oversold levels. Traders looking to enter a stock based on an overbought or oversold reading in RSI might find themselves continuously on the sidelines. To increase the sensitivity and provide a method for identifying overbought and oversold levels in RSI, Chande and Kroll developed StochRSI.

Developed by Welles Wilder, RSI is a momentum oscillator that compares the magnitude of gains to the magnitude of losses over a period of time. Developed by George Lane, Stochastics is a momentum oscillator that compares the closing level to the high/low range over a given period of time.

Formulas

RSI:

$$RSI = 100 - \frac{100}{1 + RS}$$

$$RS = \frac{(Total\ Gains/n)}{(Total\ Losses/n)}$$

$$n = number\ of\ RSI\ periods$$

Stochastics:

$$\%K = 100 \times \left(\frac{Recent\ Close - Lowest\ Low\ (n)}{Highest\ High(n) - Lowest\ Low(n)} \right)$$

$$\%D = 3\text{-period moving average of }\%K$$

$$(n) = Number\ of\ periods\ used\ in\ calculation$$

StochRSI:

StochRSI =	$\dfrac{RSI\,(n) - RSI\ Lowest\ Low(n)}{RSI\ Highest\ High(n) - RSI\ Lowest\ Low(n)}$
(n)=	Number of periods used in calculation

From the formula above, it can be seen that StochRSI is the Stochastics formula applied to RSI; that is, it's an indicator of RSI. StochRSI measures the value of RSI relative to its high/low range over a set number of periods. When RSI records a new low for the period, StochRSI will be at 0. When RSI records a new high for the period, StochRSI will be at 100. A reading of .20 would mean that the current RSI was 20% above the lowest level of the period, or 80% below the highest level. A reading of .80 would mean that the current RSI was 80% above the lowest level of the period, or 20% below the highest level.

Signals

- **Overbought and Oversold Crossovers**: If an uptrend has been identified in the underlying security, then a buy signal would be generated when StochRSI advances from oversold (below .20) to above .20. Conversely, if a downtrend has been identified, then a sell signal would be generated when StochRSI declines from overbought (above .80) to below .80.

- **Centerline Crossovers**: Some traders look for moves above or below .50 (the centerline) to confirm signals and reduce whipsaws. A move from oversold to above .50 could constitute a buy signal and would remain in place until a decline below .50. Conversely, a move from overbought to below .50 would could act as a sell signal that would remain in place until an advance back above .50.

- **Positive and Negative Divergences**: A positive divergence followed by a confirming advance above .20 could constitute a buy signal and a negative divergence followed by a decline below .80 could act as a sell signal.

- **Failures**: Chande and Kroll also note that moves back past the trigger lines would indicate a failed signal. An advance back above .80 would indicate a failed signal and traders would be advised to close positions.

- **Strong Trend**: As with many oscillators, StochRSI can become overbought (or oversold) and remain overbought (or oversold) for an extended period. A move above .80 may imply overbought, but it can also indicate a strong up trend and remain above .80 for a prolonged period. Conversely, a quick move below .20 could indicate the beginning of a strong downtrend. Moves to 1 are considered very strong and moves to 0 very weak.

Example

StochRSI

WorldCom, Inc. (WCOM) © StockCharts.com

WCOM daily | 1-Aug-2000 10:04ET O:39.25 H:39.44 L:37.75 Last:38.06 Chg:-1.00

RSI(14) 39.1

StochRSI(14) 0.16

([Click here](#) to see a live example of StochRSI)

In the WCOM example above, the stock peaked in Jun-99 and was in a well-established downtrend. A series of lower lows and lower highs confirmed the primary trend as bearish. According to Chande and Kroll, these conditions would best suit StochRSI for identifying overbought levels from which to short the stock. Each time StochRSI advances above .80, an overbought situation would occur. When the indicator declined from its overbought level back below .80, a sell signal would have been given.

From March to June, the indicator gave 4 sell signals, or one per month. The July sell signal was not recognized because there was a possible change in trend. As long as the series of lower highs and lower lows continued, the downtrend remained intact. A higher low in late June was followed by a higher high in July to call into question the strength and validity of the downtrend. Once the higher high arrived, the signals for StochRSI may have required adjustments to protect against whipsaws.

Trying to buy the stock on advances from oversold levels back above .20 would have proved difficult. There were whipsaws in March and May that would have resulted in some bad trades. This choppy action around .20 could have also led to some premature exits from profitable short positions. When a stock is trending lower, it is sometimes prudent to raise the level in order to close short positions (or to generate buy signals). In this case, a trader could have required StochRSI to move from oversold to above .50 before closing short positions. This would have eliminated the March and May whipsaws.

Conclusions

It is important to remember that StochRSI is an indicator of an indicator. It is designed to predict extreme readings in RSI before the actual RSI reaches these extremities. As an indicator of an indicator, it is further removed from the actual price of the underlying security. Because it is actually predicting RSI, but being used to predict price changes in the underlying security, it will have greater sensitivity and be prone to false signals, especially if used incorrectly. As with other indicators, StochRSI should be used in conjunction with other indicators and aspects of technical analysis.

Written by Arthur Hill

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