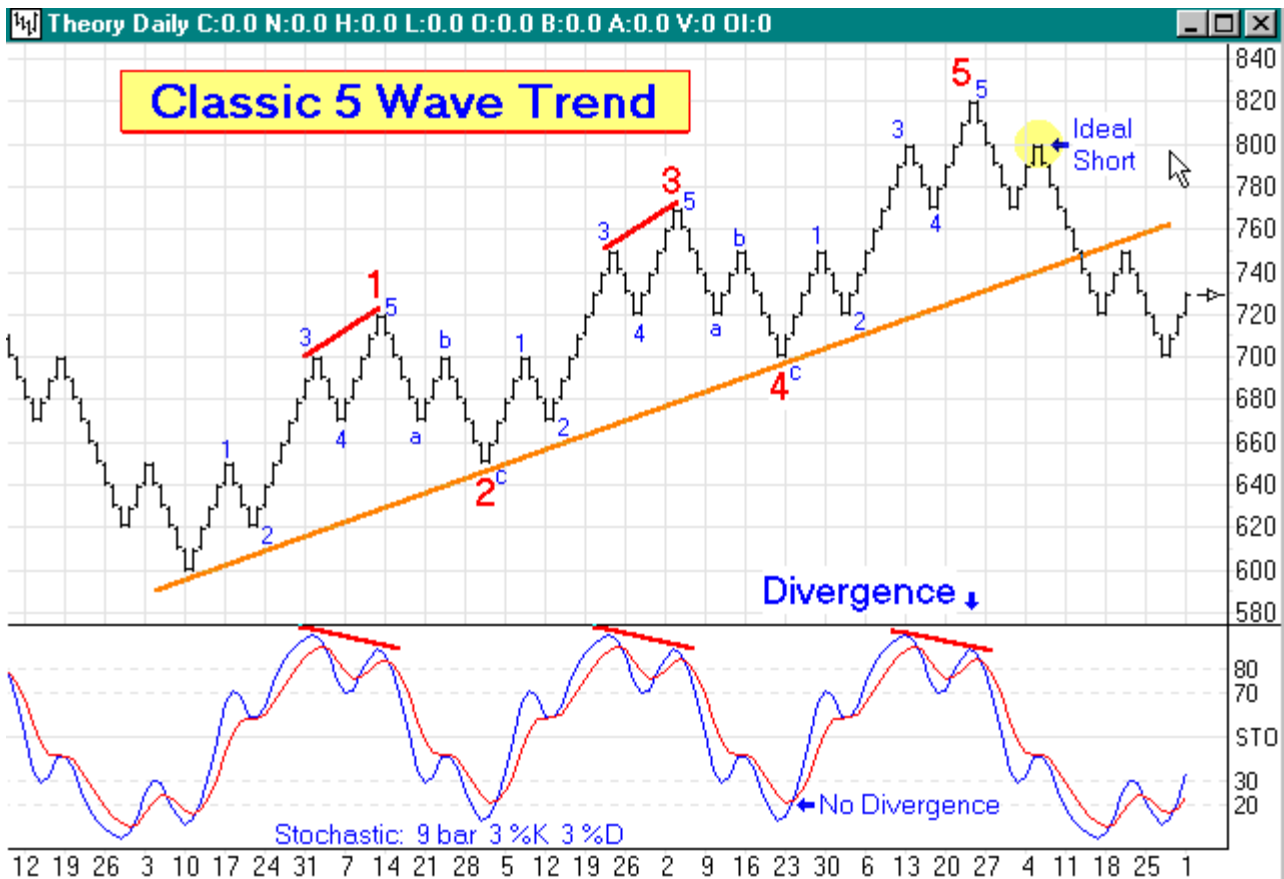


Stochastic

The Stochastic study calculates a value between 0 and 100 which represents the relation of the Current price to the highest high and lowest low of the last N bars. For example, if N is equal to 10 then the Current price is compared to the high low price range of the last 10 bars. The Stochastic value will be 100 if the Current price is equal to the highest high of the last 10 bars. The Stochastic value will be 0 if the Current price is equal to the lowest low of the last 10 bars. The Stochastic value will be 50 if the Current price is exactly in the middle of the price range of the last 10 bars. The Raw Stochastic value is often called Fast %K. A moving average of the Fast %K value is calculated to obtain a smoother value. The smoothed value is called both Fast %D or Slow %K. A moving average of Slow %K is calculated to obtain a 2nd smoothed value. This value is called Slow %D.

In summary, the initial stochastic value (Fast %K) is averaged twice to obtain the Slow %K and Slow %D values. These values are then plotted on the chart. Stochastic values above 80 indicate a possible overbought condition. Values below 20 indicate a possible oversold condition. Watch for divergence between the %D line and the price. A divergence occurs when the %D value starts to go up while the price of the bars is still going down. When a divergence occurs, a possible trigger is the %K crossing the %D line. Click the Studies button on the Chart Toolbar and then select Stochastic to draw the study on a chart.



Formula

Raw stochastic is the percentage of where a price is in a range of highest high - lowest low over a set of bars. Some call the raw value Fast %K.

Raw Stochastic = $100 * (\text{Last} - \text{LowestLow}) / (\text{HighestHigh} - \text{LowestLow})$.

Slow %K is an average of the Raw Stochastic. Some call this first average Fast %D.

Slow %D is an average of the Slow %K. This is the 2nd average.

Ensign 10 offers 11 choices of which formula to use for calculating the averages. The average used for the original Stochastic work was an exponential moving average. However, variations using simple average, weighted average and smoothed average are also worthy and useful Stochastic calculations.

The smoothed average formula is very similar to the exponential formula. The difference is in how the Alpha decay factor is derived from the average parameter N.

See these formulas:

Exponential = Previous Average + $((\text{Current Value} - \text{Previous Average}) / \text{Alpha})$
where Alpha = $(N+1)/2$

Smoothed = Previous Average + $((\text{Current Value} - \text{Previous Average}) / \text{Alpha})$
where Alpha = N

The parameter N is greater than or equal to 1. If the parameter entered is less than 1, then invert the parameter using $N = 1 / \text{parameter}$.

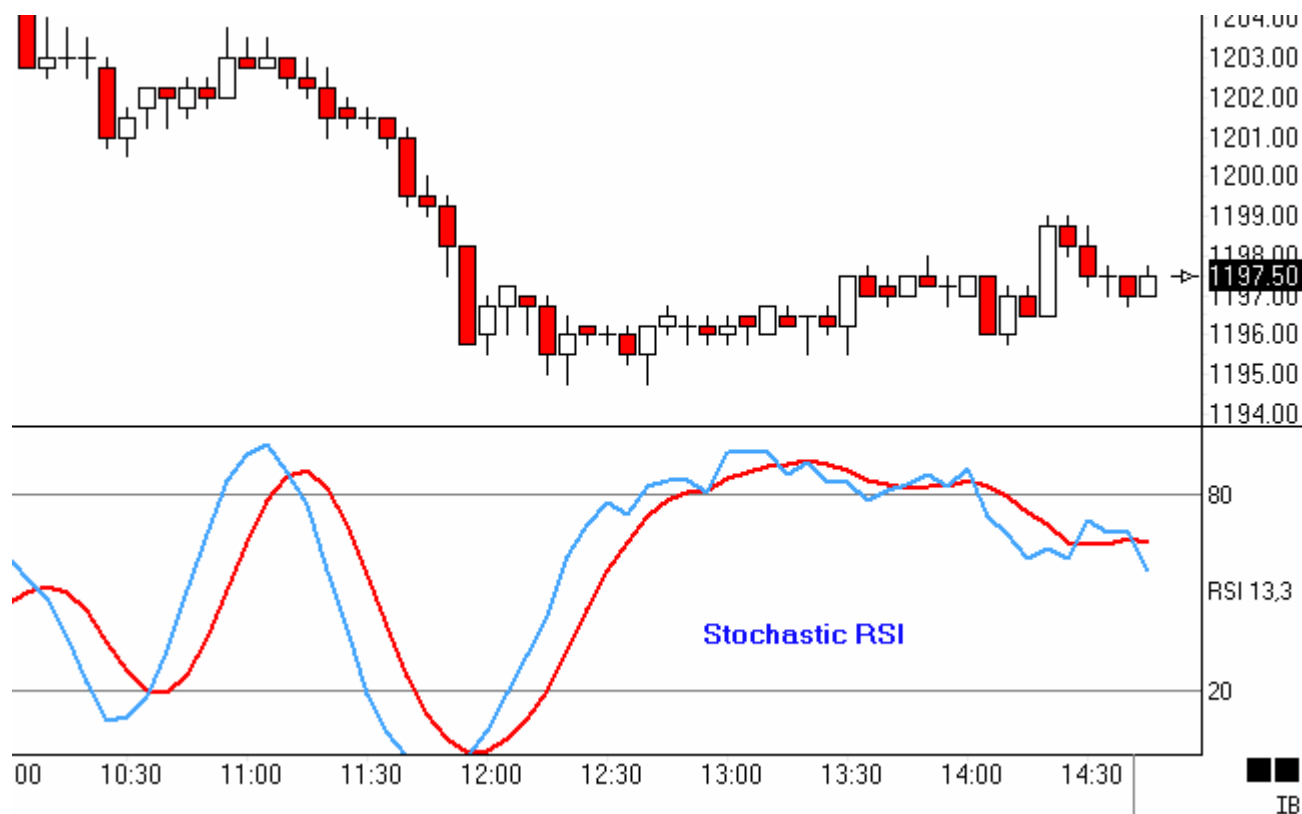
Ensign 10 does not do a 3rd average. If an average of the Slow %D is wanted, then put on a moving average study and set its Data Point to be the %D value of the Stochastic study.

Cross-over Forecast

Ensign 10 calculates and displays the price that the current bar must close at, in order for the Stochastic lines to cross. This is called the *Stochastic cross-over forecast*. The cross-over price is displayed as the third Stochastic number in the studies panel on the left edge of the chart. This number is very useful for traders who trigger trades based on the crossing of the Stochastic lines.

StocRSI

The StocRSI indicator is a combination of Stochastic and RSI. The StocRSI indicator is implemented by putting an RSI study and a Stochastic study on the chart. Go to the property form for the Stochastic study and change its Data Point to reference the RSI study. The RSI study can be hidden. Save this combination as a StocRSI template.



Stochastic Properties Window

| | | | | | | | |
|----------------------|---|--|--------|--|--|--|--|
| Bars | 9 | | | | | | |
| %K | 5 | | Simple | | | | |
| %D | 5 | | Simple | | | | |
| Shift -L/R+ | 0 | | | | | | |
| Data Point | RSI 10,1/3 x | | | | | | |
| | RSI Value | | | | | | |
| Study Mode | | | | | | | |
| | <input checked="" type="radio"/> Standard | | | | | | |
| | <input type="radio"/> Rising...Falling | | | | | | |
| | <input type="radio"/> Above...Below | | | | | | |
| | <input type="radio"/> Zones | | | | | | |
| Location | Sub Window 1 | | | | | | |
| Color Band Positions | None | | | | | | |

| Show | Zones | Color | Style | Marker | Color | Variable |
|-------------------------------------|-------|-------|-------|--------|-------|----------|
| <input checked="" type="checkbox"/> | | Blue | — | | Blue | 0 |
| <input checked="" type="checkbox"/> | | Red | — | | Red | 0 |

Stochastic Parameters

I guess it depends on which book you read. One author says Stochastic is to be used in trending markets only, another says to use divergence only for calling tops and bottoms and a third will say it is totally useless. All 3 are right and wrong at the same time. Any indicator is useless unless you understand what it was designed to do and how it was designed to be used.

Stochastic was designed based upon cycles. The static use of 14,3,3 for the Stochastic parameters will get you in trouble unless you are trading a 28 bar cycle. Stochastic was designed to use the 1/2 cycle. Divergence is a warning of an impending change. You can get 2, 3, 4 or more divergent tops or bottoms. There is no specific number given for the indicator.

You can back test the heck out of Stochastic and come up with the wrong answer because it is the current cycle width that determines the accuracy of the indicator. Do you want to use regular or exponential moving averages? That is what the 3,3 is: the moving average and the moving average of the moving average. The Moore report used to give the stochastic indicators for the various commodities and they changed every month, and they were different for up moves and down moves for the same commodity. That is what they got by back testing.

If you check the cycles, you will find that they are fairly constant for a specific commodity, stock or index. Usually all the stocks in a sector will trade on the same cycle. There are always the exceptions. Cycles are always measured from low to low. Never from high to high. A low is defined as a bar that is lower than the previous bar and lower than the following bar. Therefore, you can have a low in the middle of an up trending or down trending move. For a better understanding of cycles read Hurst's book. It is about the best out, even though it is about 30 years old, and still pertinent.

Like any other indicator that I have found, it will not stand alone as an entry and exit tool for a trading system. It can be used very advantageously in a trading system. I use it in mine and find it very helpful.

Article by Ira Tunik