# Catching Currency Moves with The Schaff Trend Cycle Indicator

Running a trend indicator through a cycle oscillator creates an effective entry technique into today's strongly trending currency markets, says Doug Schaff, a 20-year veteran in the foreign exchange market, in the first of a series of articles on techniques for the forex markets.

# chartpoint

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**Introducing the Schaff Trend Cycle**

**T**he first step to making a currency trading decision is to identify a market trend. The earlier you can confirm a trend the better. Traders are constantly looking for a better way to do this, a better trend indicator, one that identifies trend faster, *without giving up accuracy*. This trade off between speed and reliability is a continual challenge for currency analysts.

The Schaff Trend Cycle Indicator™ (STC) was developed to improve upon the speed and accuracy of the MACD in identifying trends. It is calculated by running a MACD Line (the difference between two exponential moving averages) through a reworked stochastic algorithm.



**Chart 1 – GBP/USD Six Hour Chart: 4/23/02 – 5/21/02**
*The Schaff Trend Cycle Indicator identifies trend cycle highs and lows.*

I use the STC to find cycles within a trend. The peaks and troughs within these "trend cycles" can help identify trends, and pinpoint low-risk trading opportunities — buying within uptrends, and selling within downtrends. The STC is also a useful overbought / oversold indicator in sideways markets.

**Comparing the STC to the MACD**

The STC cycles or "oscillates" within a fixed scale of 0 to 100. Dotted lines are drawn horizontally at 25 and 75, and are called the 25-line and 75-line or "buy" and "sell" lines, respectively.

The STC generally turns up from below the 25-line, significantly sooner than the MACD crosses above the MACD Signal Line, giving traders an earlier indication of the direction of the market. The same is true on the sell side. The STC generally turns down from above the 75-line before the MACD crosses below the Signal Line.

**Reaction of the STC and the MACD in the USD/JPY Market**



**Chart 2 - USD/JPY Hourly Chart: 5/13/02 - 5/16/02**
*Yellow price bars show points where the STC rose above the buy line or fell below the sell line. Magenta price bars show MACD crossover points.*

Chart 2 shows the reaction of the Schaff Trend Cycle and the MACD indicators to price changes in the hourly Dollar-Yen market. In each case, the STC turns up or down earlier than the MACD crossover, by 3 to 5 hours. More importantly, the STC turns at better trading prices, ranging from 12 to 60 points.[1] Making trading decisions on the basis of the STC would have resulted in significantly better trading prices and earlier market entry than the MACD.

|  | Date | STC Turn | MACD Crossover | TC over MACD |
|---|---|---|---|---|
| **Bullish** | **May 13** | 4:00 STC up at 127.48 | 8:00 MACD cross up at 127.67 | Time: + 4H Price: +19pips |
| Bearish | May 13 | 19:00 STC down at 128.51 | 22:00 MACD cross down at 128.39 | Time: +3H Price: + 12pips |
| **Bullish** | **May 16** | 6:00 STC up at 127.67[2] | 11:00 MACD cross up at 128.27 | Time: + 5H Price: + 60pips |

**Table 1: Comparison of STC and MACD reactions to USD/JPY price action on 5/13/02 & 5/16/02.**

**Tracking Trend Cycles with Moving Averages**

Many analysts use two exponential moving averages together to identify trends.[1] Ideally the longer EMA mirrors a currency's trend, and the shorter average follows the intermediate or minor retracements within the trend.

Trend action in the Australian dollar (chart 3) shown below is tracked using EMA lines. When the faster yellow EMA line is above the slower green EMA line, and both are rising, an uptrend is taking place.

**The MACD**
The Moving Average Convergence Divergence (MACD) oscillator was developed by Gerald Appel to anticipate changes in trends.

1.     It calculates the difference between two exponential moving averages[1], and plots it as a **MACD Line.**

2.     This value is then averaged for a specific number of bars and plotted as a **MACD Signal Line.**

3.     The difference between the MACD Line and the MACD Signal is calculated and plotted as a **MACD Histogram.** The MACD histogram rises and falls above and below a zero line.

**Interpreting the MACD**
No single technical indicator can be relied upon by itself to consistently predict price trends, reversals, or corrections. Since the MACD is based on moving averages of historical price data, the information it produces often lags actual price movement. The MACD can therefore be "late" in signaling a price move or trend change. That being said, the MACD is still one of the best indicators of direction of trend available to technical traders.

As a trend-following indicator, the MACD can be interpreted as follows. When the MACD crosses above the MACD Signal, and both are rising, an uptrend may be beginning, indicating a buy signal.

Conversely, when the MACD crosses below the MACD Signal, and both are falling, a downtrend may be beginning.

The MACD fluctuates above and below a zeroline. When the MACD is positive (above the zeroline and rising), a market is considered to be in an uptrend. An early warning of a trend reversal occurs when the MACD begins falling. Confirmation of a trend reversal occurs when the MACD falls below the zeroline.

**Chart 3 – AUD/USD 1 Hour Chart: 5/16/02 – 5/20/02**
*This chart shows 23-period and 50-period EMA lines (yellow and green, respectively).*

Notice how the distance between the two EMA lines contracts and expands in a wave-like motion. That movement shows what I refer to as a trend cycle. When the faster yellow line pulls up and away from the rising green line, the trend cycle is rising. When the distance between the two EMA lines narrows, the trend cycle is narrowing.

**Schaff Trend Cycle Inputs**

The Schaff Trend Cycle indicator improves on the performance of the MACD by using three inputs:

1.  TC Period: Set at half the estimated time cycle length.
2.  MA1 Period: Shorter-term Exponential Moving Average.
3.  MA2 Period: Longer-term Exponential Moving Average.

The default inputs are set at 23 and 50 for the EMA lengths. But traders can choose their own MA period inputs, based on the moving averages that they prefer to follow.

The Schaff Trend Cycle works well with the default inputs in most timeframes. But I also vary them. I sometimes use smaller EMA length inputs for longer timeframes. With weekly charts I might try 12 and 26, or 7 and 13.

For shorter-term charts, I tend to increase the EMA lengths. For example, on a 10-minute Aussie Dollar chart, for instance, I will often use 115 and 240 for EMA lengths.

The "TC Period" uses half the estimated length of a currency's standard time cycle. Most currencies exhibit a 17-22 period recurring cycle. The default TC length is therefore 10, or about half the length of a time cycle that regularly occurs in most currencies and timeframes. Traders can vary this input to study shorter or longer cycles, or to speed up or slow down the STC indicator. A shorter TC Period, such as 5, will produce more oscillator turns. A longer TC Period will produce fewer, but perhaps more accurate turns.

**Finding Trend Cycle Lows in an Uptrend**

The movement of trend cycles is often mirrored in currency prices. In an uptrend, when the Schaff Trend Cycle Indicator is rising, prices tend to stabilize or follow the cycle higher. Similarly in a downtrend, when the STC is falling, prices follow the cycle down.

Between May 17th and May 20, 2000, Aussie prices were sharply rising (see Chart 3). The ideal time to buy into this uptrend would have been after a trend cycle had bottomed out, after a pause or retracement in the uptrend had ended. That can be hard to determine or see, though, using EMA lines alone (see Chart 3). But look what happens when we add the Schaff Trend Cycle indicator (see Chart 4).



**Chart 4– AUD/USD 1 Hour Chart: 5/16/02 – 5/20/02**
*The yellow Schaff Trend Cycle Indicator is shown in the lower chart panel.*

The yellow STC oscillator highlights trend cycle bottoms and tops.

The first Trend Cycle Low occurs where the turns up from below the 25-line. The trend cycle continues to rise until the STC turns down from above the 75-line. From there, the trend cycle declines to the second Trend Cycle Low.

Notice how the Aussie prices move sideways as the trend cycle moves from the Trend Cycle High to the second Trend Cycle Low. This is consistent with what typically occurs during a consolidation within an uptrend. The market pauses, and then, takes off again, near the second Trend Cycle Low, along with the beginning of a new trend cycle.

If the place to buy into an uptrend is after a trend cycle has bottomed, then we need to clearly see the price bar associated with the STC turn. To find this entry point we can add the Schaff TC Trigger to the price chart.



**Chart 5– AUD/USD 1 Hour Chart: 5/16/02 – 5/20/02**
*The green and magenta Schaff TC Trigger bars show potential buy and sell points within an uptrend.*

**Using the Schaff TC Trigger**

The Schaff TC Trigger provides a setup and trigger approach to create automated trade entry and exit signals, based on the Schaff Trend Cycle Indicator (STC).

In the chart above, buy signals are constructed in a three-step process.

- The yellow Schaff Trend Cycle indicator drops below a buy line.
- The STC turns up. The price bar above it is colored green and is called a setup bar.
- A high of the setup bar is exceeded or "triggered"[1] initiates a long position.

The same process, in reverse is used to create short signals.

- The Schaff Trend Cycle indicator rises above the sell line.
- The STC turns down. The price bar below it is colored magenta and is called a setup bar.
- A low of the setup bar is exceeded or "triggered"[5] initiates a short position.

In Chart 5, the green STC Trigger at A is a buy setup bar in an uptrend and, if triggered, can be used to go long. An end of this trend cycle occurs at the magenta TC Trigger at B. This is a sell setup bar in an uptrend, which can be used to take profit on a long position. The green STC trigger bar at C shows another low-risk buy point within the uptrend.

**Finding Sell Entry Points in a Downtrend**



**Chart 6 – USD/CHF 4-Hour Chart: 5/12/02 – 6/02/02**
*The green and magenta Schaff TC Trigger bars show potential buy and sell points in a downtrend.*

The Schaff TC Trigger highlights two trend cycles in the 4-hour Dollar-Swiss chart. The first green buy setup bar triggered at A and prices rose over 200 points. The magenta sell setup bar triggered at B, and prices fell nearly 300 points. The trend cycle is complete when green buy setup bar is triggered at C, and a new trend cycle begins. Although the market did not close above the green buy setup bar, at E, it traded sufficiently above it so that most traders would have covered a short position, if they had not done so already. And so the trend cycle low was marked at E.

Note how the two green setup bars, before Point C, did not trigger. This illustrates how the "setup and trigger" method, that we use to enter trades, can save you money. In the first case, the market barely exceeded the buy setup bar. In neither case did it close above. This allowed traders to maintain short positions (or refrain from buying) for another 100+ points.

**Confirming the STC**

The Schaff Trend Cycle indicator seeks to improve upon the speed and accuracy of the MACD as a trend and timing indicator. The most consistently profitable trades occur in the direction of trend. Therefore the STC can be an effective method of entering into strongly trending currency markets. It is recommended that traders consider other indicators and/or price patterns to confirm the STC. Depending on traders' styles and preferences, the STC can be used as a timing indicator in conjunction with other trend identification tools, such as a MACD or double-EMA measure, to buy into uptrends and sell into downtrends.

In particular, a structured approach to using the STC in multiple timeframes gives a powerful context within which to make currency trading decisions.

That is the subject of our next article:

**Using Trend Cycles in Multiple Timeframes
. . . to target High-Probability Currency Trades**

*The Schaff Trend Cycle indicator and TC Trigger are available on a trial basis on **SchaffChart**, a live currency charting service The Schaff Trend Cycle indicator and TC Trigger are available on a trial basis on **SchaffChart**, a live currency charting service (**www.fx-strategy.fxtrek.com**). All Chartpoint readers are welcome to test it out, themselves, for free.*

*The author, Doug Schaff has traded the FX markets for over 20 years. His company **FX-Strategy.com** was created to assist currency traders and investment advisors with trading decisions. Online courses are available. Please visit his website at **http://www.fx-strategy.com** for more information.*

**Footnotes:**

[1]   These results are representative of the STC and MACD in most currencies and timeframes.

[2]   The next bullish STC turn is not highlighted, assuming that a trader would have already reacted to this earlier STC turn.

[3]   12 and 26, and 23 and 50 are popular EMA length inputs.

[4]   This is similar to the MACD, but looks at both EMA lines, rather than at their difference.

[5]   Traders can employ various trigger rules. For shorter intraday timeframes I require that a market close above a buy setup bar in order to consider it "triggered". For a sell setup bar, I require that a market close below it to consider it "triggered". Another variation is to require that the market trade a certain number of points above a buy setup (or below a sell setup bar) in order to consider the setup bar triggered.