Enhancing And Nonenhancing

The Chartmill Value Indicator

Part 3

In the final article of this series, you'll find more ways to apply the Chartmill value indicator and determine if it enhances the indicators you already use.

by Dirk Vandycke

The Chartmill value indicator (CVI) is a short-term oscillator which, like dozens of other oscillators, tries to capture overbought and oversold situations. Because it is created using a statistical normalization procedure, it is unlike most other well-known oscillators. For one, it doesn't suffer from the stickiness that keeps other range-bound oscillators in overbought and oversold zones while a strong trend is developing. Second, the CVI copes nicely with the lag that moving average–based oscillators have. Finally, because it doesn't use any parameters, it is objective in its definition and hence is ideal for algorithmic implementation in software.

Hence, it becomes necessary to have an objective interpretation of the CVI. In this article, you will find out if the CVI has any real and statistically significant usefulness.

Recap

The CVI going below -8 (two standard deviations) is considered oversold or short-term undervalued, while having it above +8 would be overbought and short-term overvalued. If necessary, you can consider smaller intervals to increase the number of samples like [-7, +7], as [-8,+8] might give too few signals while backtesting. In addition, the interval used doesn't have to be symmetrical. In a bull market, you could consider anything below -6 already oversold. But the indicator seems to perform well using [-8, +8]. The changes in the interval are merely to drive up sample size in backtests and generate more signals.

In my previous article, I showed that selling while an indicator is overvalued may help a short trade. Likewise, long trades can be more successful when you enter the trade when the CVI is undervalued. Look at Figure 1. Pure entry systems (that is, nontechnical entries) are compared during a bull market. Clearly, the entry system based on entries on undervaluation, as measured with the CVI, seems to make a difference.

This illustrates the val-

ue of the CVI as an add-on to existing trading systems or indicators. As any trader with experience will know, no single indicator in its own right makes for a complete trading system. When most indicators make it to the backtests, the results often tend to be disappointing. In fact, no set of indicators is a complete system, as successful trading requires consistent money management discipline and careful risk management. Nevertheless, I am going to explore the CVI as a catalyst by looking at its effect when added to other indicators or entry systems.

PATTERN FILTER

The point of using pattern filters is to sort through the signals of a pattern — that is, getting less of them. You want to see if it is possible to increase the success rate of that particular pattern. To estimate the value of the CVI as a pattern filter, you need to use an objectively defined pattern, like a key reversal bar, and see if you can pump up its success rate with the CVI oscillator.

I will define a key reversal bar here as a bar opening below the previous bar's close but closing above the previous bar's high. So I gathered all those key reversal days through a backtest and looked at the average profit for each day forward after such a bar.

A random key reversal day shows an average profit of about 3%, 30 days after it was taken (Figure 2). After that period, the effect of a key reversal day seems to wear off. In the first five to seven days, the key reversal day shows an average loss but never amounting to more than 1%.

When the key reversal days get filtered by allowing only those key reversal day entries to be taken when the CVI is less than -8, the number of valid entry signals drops by about 50%, while the average profit on 30 days almost doubles.

Adding the additional criteria to the key reversal signal didn't change anything. Again, after about one month, the signal effect fades away. This may be seen as an advantage, since it results in overall sharper exit signals, hence not keeping you in a jittery sideways movement. More important, note that the small average adversity at the beginning of a key reversal day trade seems to be only half the length (three days instead of up to seven) with the added CVI filter.

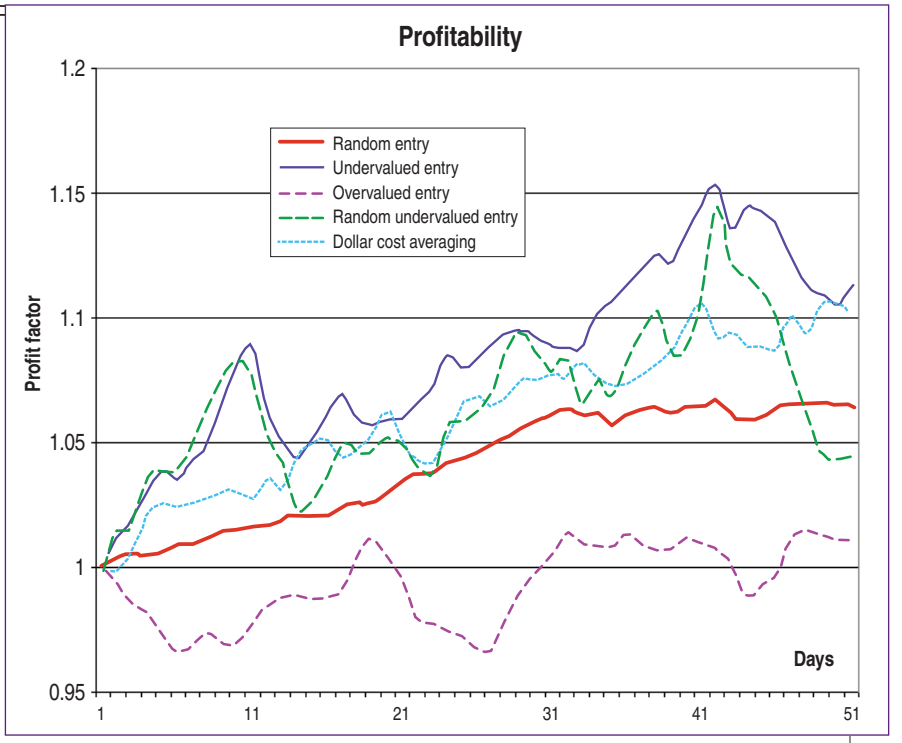

FIGURE 1: COMPARISON OF DIFFERENT ENTRY SIGNALS WITH AN UNDERVALUED CVI ENTRY SYSTEM. Buying short-term undervaluation (the Chartmill value indicator below -7) seems to pay off against other entry strategies. Here, a random entry system is used as a benchmark.

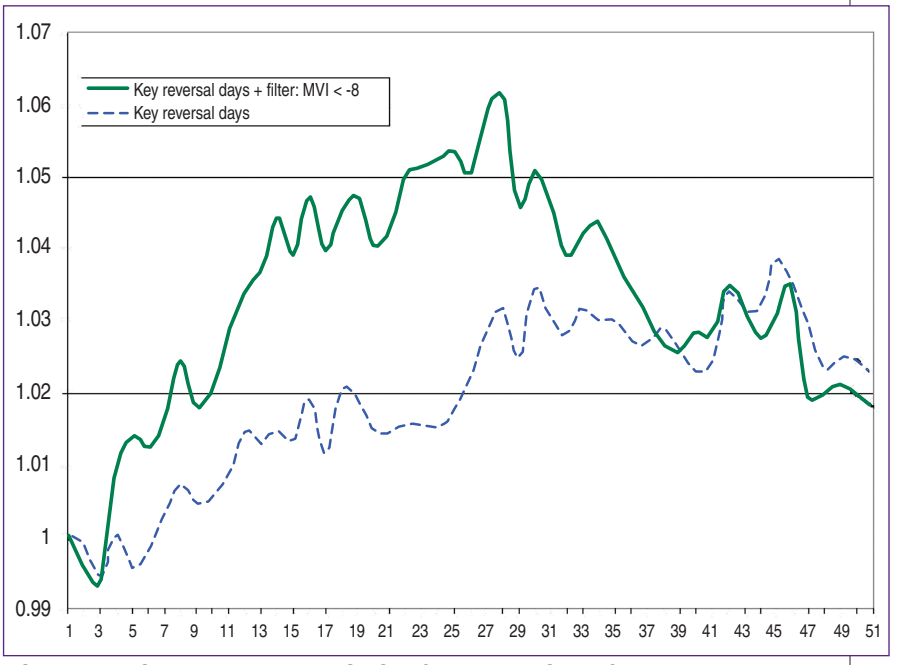

FIGURE 2: THE CHARTMILL VALUE INDICATOR AS A PATTERN CATALYST. Here, you see the effect on the average return for 50 days after a key reversal day compared to when those key reversals are taken when the CVI < -8. This demonstrates the possible positive effect of buying near short-term cheapness as indicated by the CVI.

SYSTEM FILTER

A key reversal day is merely a pattern. Although we are designed to see patterns everywhere, it takes far more than one to have a complete trading system. The entry patterns we use to open a trade might well be (and probably are) of lesser importance. Nevertheless, it is a good idea to test the addition of a CVI filter to a trading system since the entries can be fine tuned with this additional filter. Here's the system that was backtested: Enter a trade when the 25-bar simple moving average is above the 75-bar simple moving average and when prices break above the highest high of the previous five bars — that is, a five-period Donchian channel breakout.

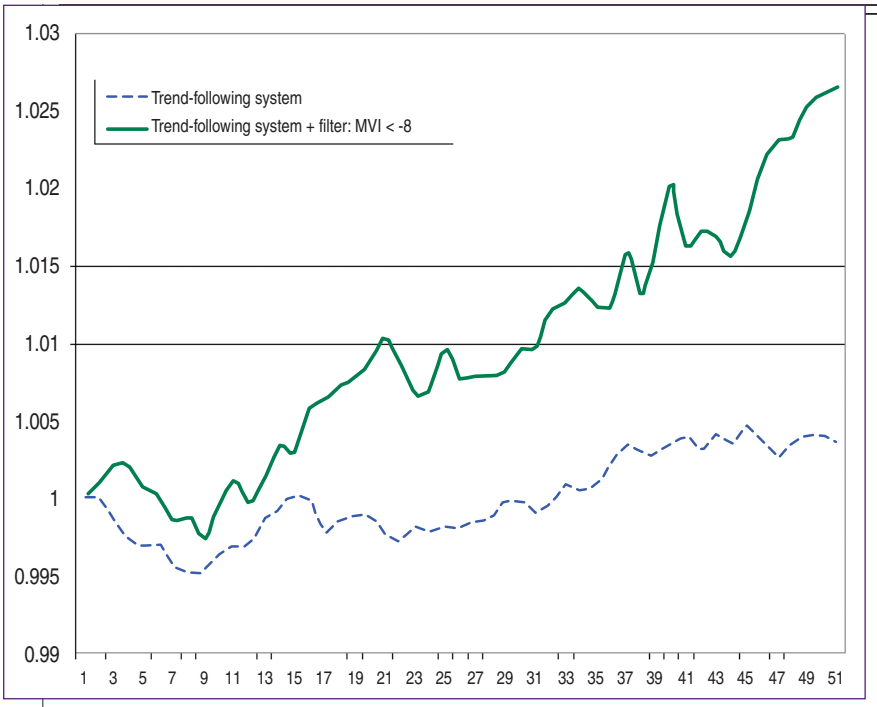

FIGURE 3: THE CHARTMILL VALUE INDICATOR AS A TRADE SYSTEM ENHANCER. Here, you see the effect on the return of a trend-following trade system when entries are taken when the Chartmill value indicator shows short-term undervaluation. Note its superior performance to the unenhanced trend-following system (dotted line).

What would happen to price, on average, over the next 50 days after entering a position? The results from this experiment — far from impressive — can be seen in Figure 3. Note that it takes the average trade about 30 days to become only marginally profitable.

Let's see if adding the CVI < -8 filter would make any difference to the results of the trend-following trading system. With the moving average requirements and by adding only those five-bar Donchian channel breakouts when the Chartmill value indicator has a value below -8, a sign of short-term undervaluation, there was a significant improvement in the results (Figure 3).

To begin with, the average trade has a negligible initial drawdown, both in terms of duration as well as size. The maximum drawdown is about half that of the original, while the days in losing territory for the average trade is minimized to only five to six days compared to almost a whole month in the original, unenhanced, system. Further, the average trade has a much clearer trend overall. Note that 50 days after entry, the average trade for the enhanced trend-following system returns up to five times more just by adding the CVI filter.

NOT TOO SHABBY

In my quest of a better oscillator that produces sharper but fewer signals with as little lag as possible, the CVI seems to be promising. It is based on the concept of short-term valuation being led by most recent prices. The data is interpreted using statistical normalization.

The distribution can, however, be skewed in bull or bear markets. Under- and overvaluation, fixed at -8 and +8, could be calibrated onto the real distribution. In a bull market, undervalued will probably have a slightly higher threshold than -8. Likewise, in a bear market, overvaluation could be calibrated lower. No differences were found when studying different financial instruments, that is, futures, equities, and so forth.

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In this series of articles, I showed you the quality of the CVI by conducting various backtest experiments. I compared buying at undervaluation with buying at random, buying overvaluation, buying on a dollar cost averaging basis, and a combination of random entry with undervaluation. This experiment makes a nice case for the quality of this new breed of oscillator and its results should make way for more testing.

I also tried to determine if the CVI could act as a catalyst to enhance pattern performance and system performances. These experiments, although too small to generalize anything, seem promising and justify further research on this new oscillator.

The indicator can be used on charts and as a screener. You can add screening constraints on the CVI value (greater or smaller than a certain level) for undervalued equities and exchange traded funds (ETFs) in your custom screen based on other criteria. The CVI can easily be added to any classic customized scan you are familiar with. That way, making use of the CVI as a catalyst becomes a walk in the park, trimming down long lists of scan results.

Dirk Vandycke has been actively and independently studying the markets since 1995 with a focus on technical analysis, market dynamics, and behavioral finance. He writes articles and develops software partly available at www.chartmill.com. He holds master's degrees in both electronics engineering and computer science and teaches software development and statistics at a Belgian university. He may be reached at dirk@monest.net.

The CVI is freely available on charts and in scanners at www.chartmill.com.

SUGGESTED READING

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