CCI

CCI – BASIC UNDERSTANDING

The CCI, or Commodity Channel Index, has gained quite a bit of popularity over the last few years. One chat room started promoting its use. That room had a large following and still does. Several other chat rooms popped up using essentially the same formula and signals. The indicator has grown over the years to possess almost magical powers. It is touted as being a leading indicator. Somehow this indicator can take the high, the low, and the close of a price bar and somehow, through some magic of math become, or I should say, in defiance of all the rules of math, lead the function from which it is derived. Can it really do this? Further, it is said by many that this is the only indicator you need. It is so good that you don't even need prices on the chart to trade with it.

I think the first thing that needs to be done here is to look at what this indicator really is. Maybe see if it really is a magic indicator, or if not, take some of the magic and mystery out of it. If you look at the code it only consists of a few lines.

Here's the code:

1. Calculate the Typical Price = (High + Low + Close) / 3
2. Calculate the simple moving average item #1. We'll call it SMATP.
3. Calculate the Mean Deviation:
   delta_i = abs(last_SMATP – TP_of_period_i)
   (for all i from 0 to N, where N is the length of a period used to calculate the SMATP).
   MD = sum_for_all_i(delta_i) / N
4. Calculate the CCI = (TP – SMATP) / (0.015 * MD)

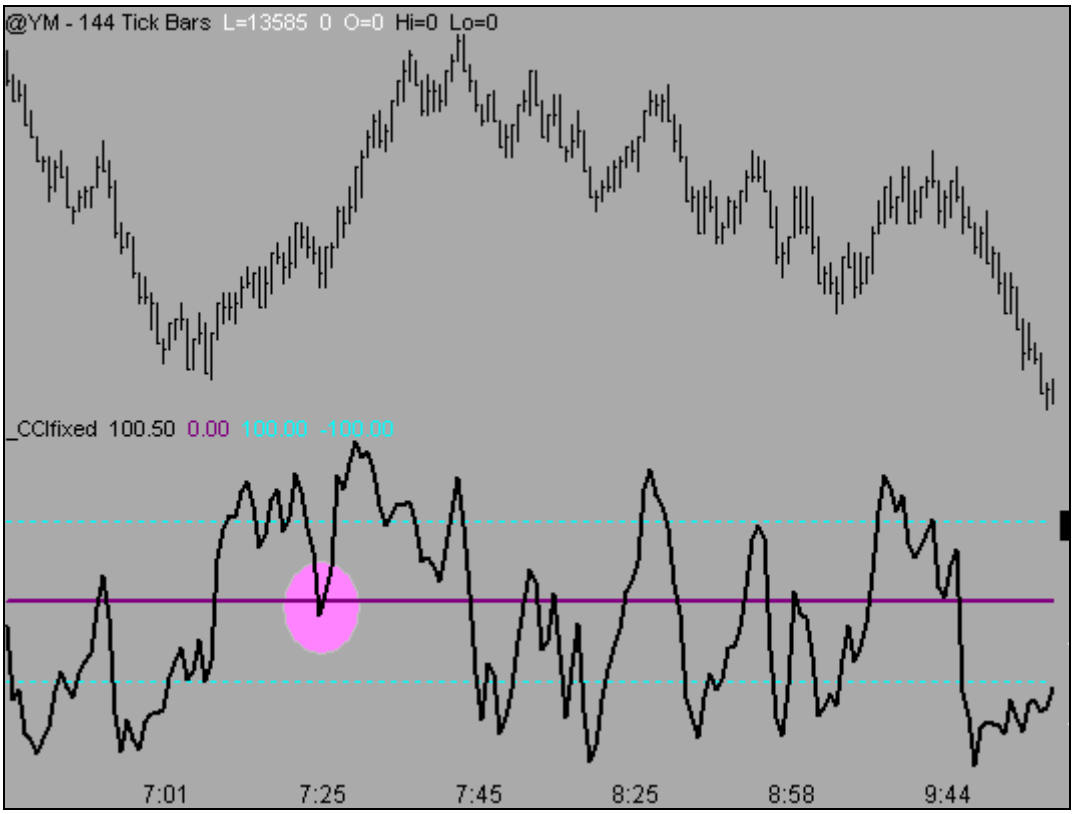

Figure 1: CCI in bottom panel with a 14-period setting

On the above chart (Figure 1) you'll see a CCI with the input parameter set to 14 bars, which is the common setting in all the chat rooms I've been in. This happens to be an intra-day tick chart on the

Dow mini-futures, however it could be a 5 minute chart or a daily chart, or any chart. Some traders will extend the 14 parameter out to 20 on longer term charts. Also, most CCI traders use a histogram on the CCI that changes color when indicating an uptrend or downtrend. I left it out for this article for clarity. The zero basis line is purple and the +/- 100 lines are dashed cyan. I put a pink circle on one of the more common patterns, which is referred to as a zero line reject. This occurs when the CCI bounces off the zero line. This would equate to a bounce off a 14 period simple moving average. Saying that blasphemes remark in a CCI chat room will probably get you booted, or at least you'll receive many nasty comments. The magic indicator with its premier setup couldn't be as simple as a bounce off of a 14 period simple moving average, could it? Let's see.

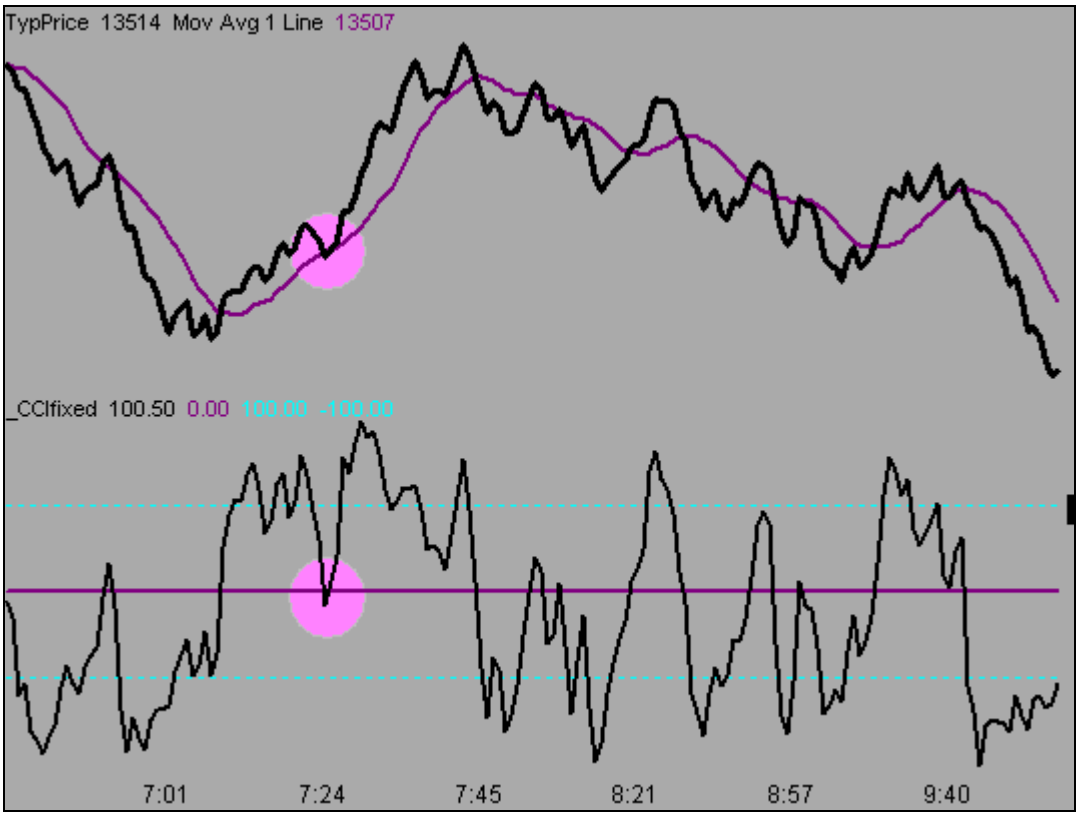

Figure 2: "Typical Price" chart with 14-period CCI and SMA comparison

On the above chart (Figure 2) I have the same CCI under the prices, but this time in the upper subgraph where the normal price bars were I replaced them with a thick black line that is what is typically referred to as the typical price. This is the first line in the CCI code above. It is simply the average of the high, the low, and the close. We are already introducing a bit of lag into this leading formula. The high and low and close normally don't occur at the same time on a normal price bar (limit moves excluded) so there is a bit of lag here, however slight it may be. The purple line is the 14 period simple moving average displayed along with the line chart of the typical price. I place the same pink circle on the CCI where the zero line reject is, and placed a circle on the price line in the same spot. You'll notice that this line bounces off the simple moving average exactly like the CCI bounces off the zero line. Could the zero line be nothing more than a detrended simple moving average? Indeed it is. The moving average is on line #2 of the code above.

On the chart below (Figure 3) you'll see the same CCI in the lower subgraph. The upper chart is the same price line but this time it has been *detrended*. The black line is the price line, that is the line of the typical price, and the purple line is the moving average. The same moving average as in the

previous example, however this time it is pulled tight like a string so the prices will skew around the moving average. It is calculated simply by subtracting the moving average from the price line. Most of the changes in direction of the price line will occur at the same time as the changes in direction of the CCI. The amplitude is somewhat different, however you should notice that the moves around the zero line are identical. I pointed out with the pink circles the one bounce off the zero line at the same time as the bounce off the moving average, which now also becomes a bounce off the zero line of the simple detrended simple moving average. I'm sure you can find many more close relationships between the two.

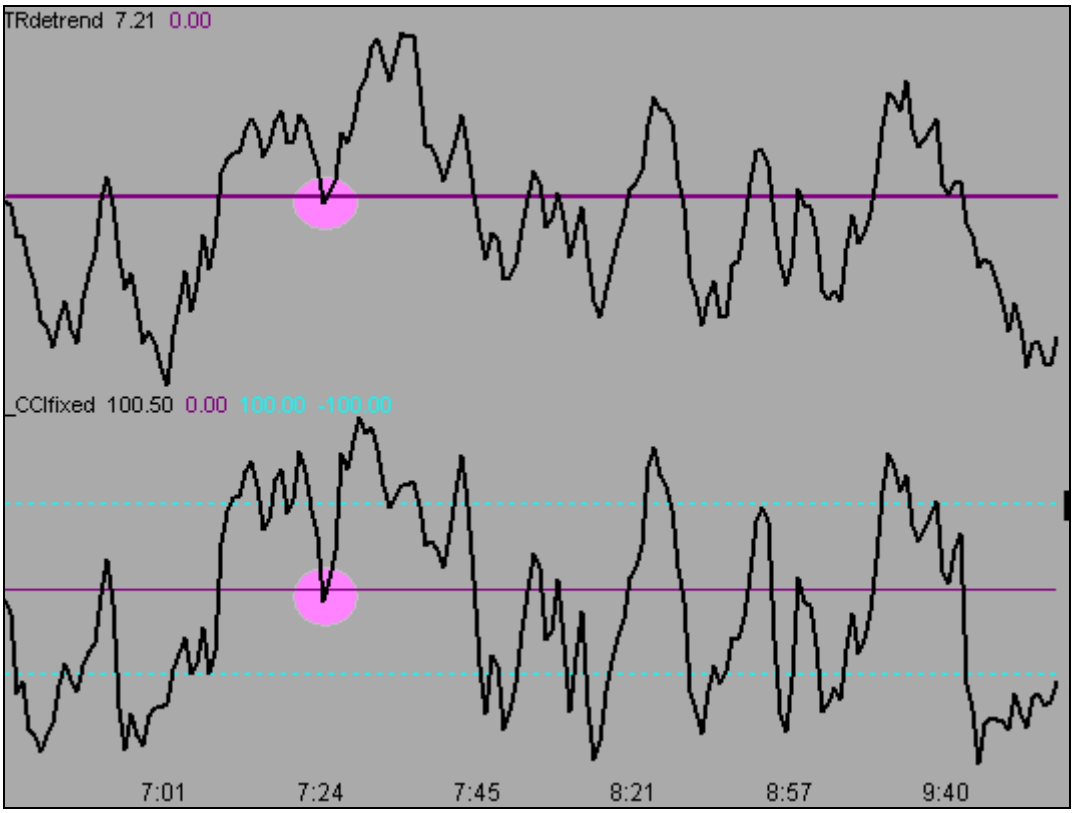

Figure 3: Detrended price and CCI comparison

If I am correct in all this, which simple arithmetic proves me to be, then not only the zero line of the CCI is nothing more than a simple moving average, also the CCI line itself is nothing more than the price detrended. I thought I heard somewhere that you didn't need prices to trade. But the CCI line is a price line, so we are looking at prices. It is price with a slight modification as each point is the sum of high, low, and close, and then divided by 3, and then skewed a bit so 70% to 80% of the prices fall within a certain range. Lambert chose rather arbitrarily to use the .015 in the denominator by eyeballing different settings until it looked like he had this percentage within the bands. You can experiment with different setting of the .015 number to see how the 100 lines change. Of course you can leave it as is and move those reference lines around to get the same effect. I just wanted to point out how arbitrary those sacred reference numbers are. I would have thought one standard deviation would have made more sense, in which case about 67% would have fallen within the boundaries.

A close approximation of the CCI can be replicated easily by the use of Bollinger Bands, which will eliminate the need for any programming as these bands are included with most software packages and can be plotted right over the price bars.

In the chart below (Figure 4) we again have the very same CCI in the bottom subgraph, and I have returned the non-detrended typical price line along with the 14 period simple moving average. This time I added the Bollinger Bands. Again the zero line of CCI is the same as the moving average, and I color coded it so it is easier to reference. I plotted to Bollinger Bands as a dashed cyan line so it can easily be referenced to the plus and minus CCI reference lines. To make them roughly equal I had to of course use the moving average length of 14 and the price input of the typical price instead of just the closing price. I also had to change the default setting of the Bollinger Bands to about 1.25 standard deviations. If one standard deviation is about 67% and two is about 95%, I figured matching Lambert's idea of roughly 80% containment would require about 1.25. I'm sure my estimation isn't perfect. I wasn't trying to get a perfect match. But you can see it is very close. So close that for all practical purposes it is the same. Just look at the excursions outside the CCI bands and then refer to the same spot on the Bollinger Bands. We've already established the relationship of the crosses and bounces around the zero line. Now the 100 lines are accounted for.

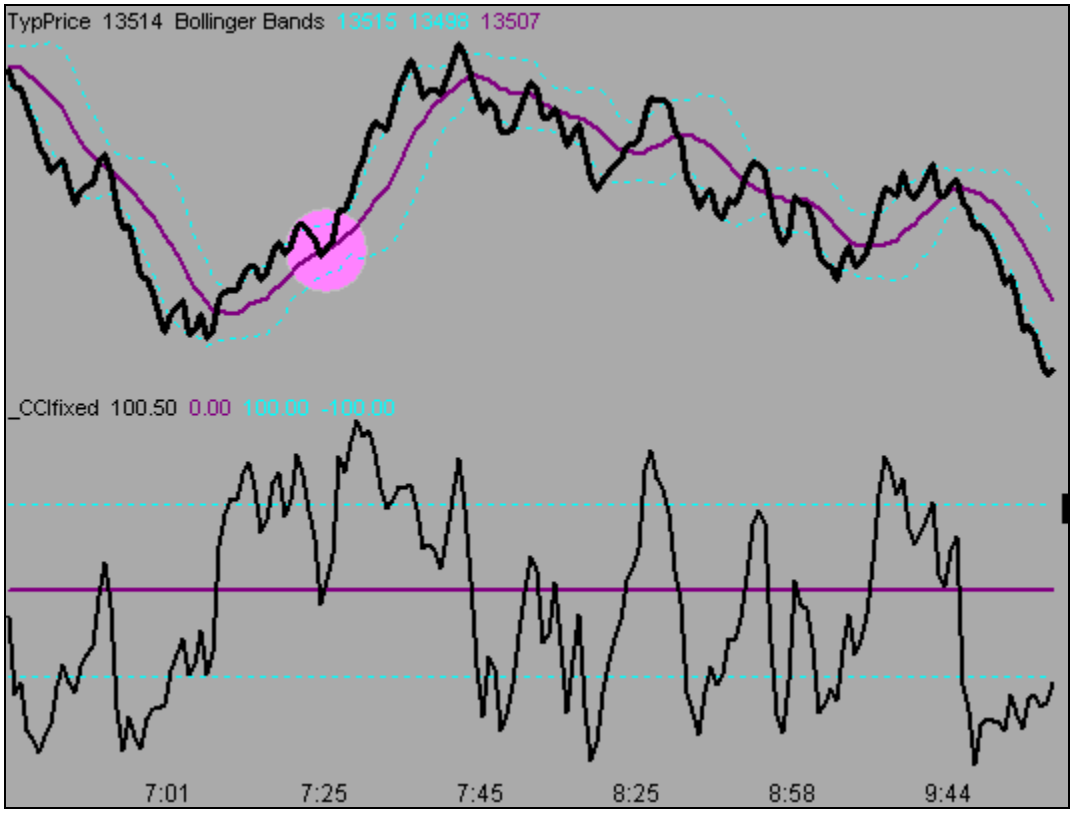

Figure 4: "Typical Price" Chart with CCI and Bollinger Bands comparison

The added advantage of viewing the Bollinger Bands right on the prices is that you can see the trend at a glance, without having to resort to supporting indicators attempting to identify the trend and its strength. And perhaps even more important, you can see when volatility expands and contracts. Sometimes the CCI will be making nice big moves, just enough to get the CCI traders excited, but prices might not be going anywhere. Tight Bollinger Bands will show this at a glance. Of course, when the bands are tight they usually expand back out as volatility is quite cyclical. At other times the CCI might be hardly moving, but prices making large swings. This is when the bands are wide and prices, relative to the bands, are not making large moves, but in an absolute sense they are. How can you get this information from only looking at the CCI without the advantage of seeing prices? Now what would happen if we pulled the moving average and Bollinger Bands tight like a string?

The answer is in the chart in Figure 5. Yes there are slight differences. CCI purists will say they are not at all the same. One uses mean deviation and the other standard deviation, and my parameter for standard deviation was done with a quick eyeball. But I think most rational technicians would say they are derived from the same basic concept, and despite the slight differences, one cannot say one is better than the other.

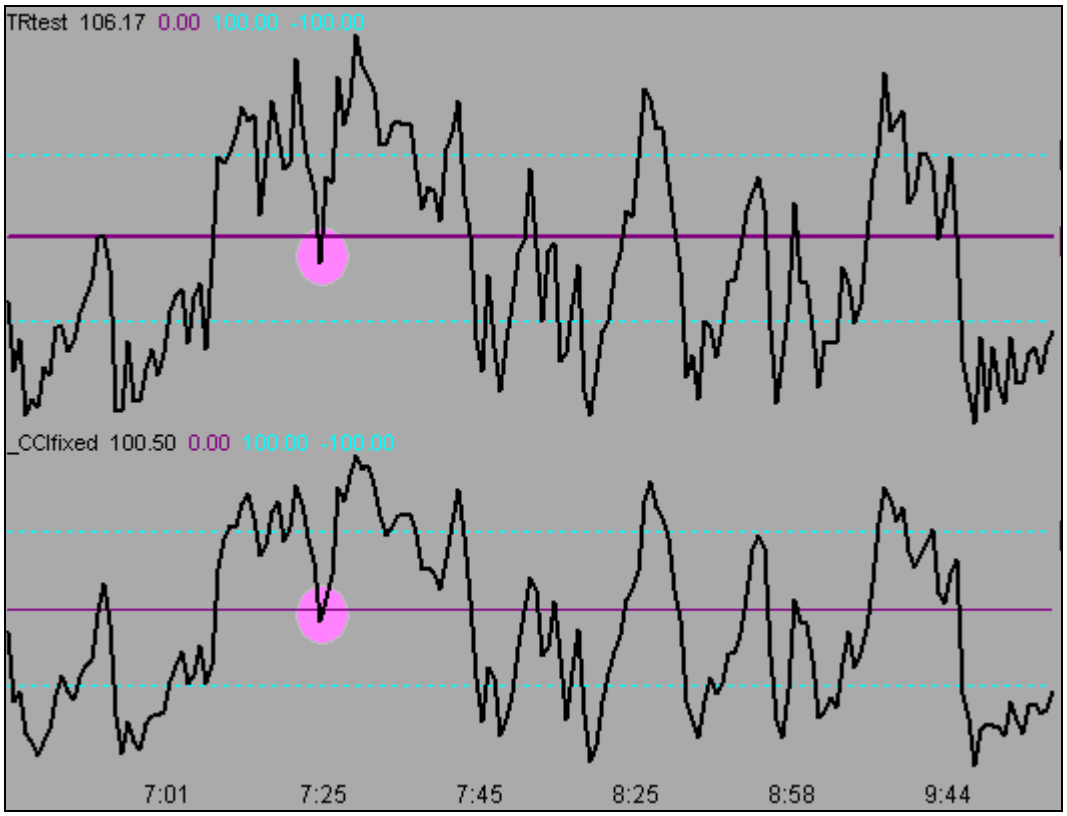

Figure 5: Similarity between CCI and Bollinger Profile and Signals

I may sound critical of the CCI, but I am not. I am critical of the promotion. I think it is a fine indicator, and one that can be made a lot better, which I will deal with in the next article. And the article after that will deal with application. I've only dealt with basic construction and understanding. To fully understand this indicator we need to deal with what is being measured, and the possible uses of those measurements. I don't think it serves any purpose to blindly call any indicator a magic, leading indicator – the only indicator you need to trade, just because people in a chat room build it up to be something that no indicator can possibly be.

CCI – Making it better

This first thing to be done in trying to make the CCI a better indicator is to go to the second line of the code (please refer to previous article for code) and understand what the simple moving average is there for. I'm not going to get into how a moving average is calculated as that's usually the first chapter in any book on technical analysis, and there are plenty of resources on the internet. However, most discussions on moving averages don't discuss what a moving average really does, other than to say you buy when prices cross over it, or buy when two moving averages cross over each other. I think that's incorrect. I view a moving average as a filter. To me the purpose is to filter out the noise of the market, and to pass through the trend. Admittedly there can be many cycles at play at any given time. Filtering the noise can mean different things to different traders; from filtering out the minor noise leaving a short-term trend, to filtering out all the little cycles and leaving only the longest trend. I plan

to delve into cycles and moving average filtering in more detail in a later article, but I need to touch on the subject here only briefly because it is key to turning the CCI from a so so indicator to a really good indicator. Moving averages in general are more successfully employed in trading when used as support and resistance, rather than for crossovers. Sort of like a moving or live trend line. You of course want to be on the correct side of the trend, but pullbacks to the trend and then trend resumption are far more profitable, in my opinion, than trading crossovers. Trading pullbacks is the theory of the zero line reject (see page 2), as well as Linda Raschke's grail trade, and many other pullback-within-trend approaches.

The CCI was designed with the simple moving average (right there in the second line of the code) as a filter to pass the trend on to the rest of the formula so the mean deviation could be calculated based on this filtered result. I recall very early software packages having a 30 period CCI, but more common today is the 20 period. Most technicians believe that the ideal parameter for the CCI to be the length of one full cycle. A cycle is usually defined as the number of bars from low to low. If you measure from high to high there is not as much accuracy as there is usually translation of the tops of the cycles either left or right depending on the trend direction. Most momentum oscillators use a half cycle length as the input parameter. Since the CCI uses a moving average up front, a full cycle would be better to filter out the noise. There are some references on the internet that suggest Lambert originally intended the use of 1/3 of a cycle. I attended many seminars in the early 1980's with much discussion on the relatively new CCI, and the full cycle length was universally accepted. I think the discrepancy is due to the fact that Lambert designed the CCI on a hand calculator without the means to test using a PC and trading software, which became available later. I think some of the contradictions on the internet are referencing his earliest writing.

His idea of trading breakouts of the 100 lines, which was his original intent, would not be logical with a very short parameter. Once he could plot and test his results he would realize that the CCI would not stay long enough beyond the 100 lines to get the results he intended. But his original idea does become viable with a longer parameter. Since Lambert's original idea tested out so poorly most traders began to use the indicator in an entirely different way than what was originally intended. Most traders seemed to use if for divergences, and for strategies involving re-entering the 100 lines, instead of breakouts beyond them. The 20 period lookback period became default in most software packages since most traders in the early days of trading software tested on daily data, and many would assume a 20 or 21 day cycle, as that is the number of trading days in a calendar month. Of course cycles expand and contract, and don't pay much attention to the calendar. The common use today in most chat rooms is to use a 14 period CCI, at least on intraday data. In my opinion, if you trade on a 14 period CCI you are trading mostly on noise. Sometimes the signals will work, but it is mostly by random chance if they do. Sometimes the cycles tighten up to be only 14 bars in length, but then the market is in chop and you probably shouldn't be trading it unless you have a very short term scalping method.

Refer to the Figure 6 chart below. The blue line under the price bars represents an estimate of what the cycle is based on a formula that attempts to extract the dominant cycle that is developing. It gives a very rough estimate of the developing cycle. It is not exact. A more accurate cycle measure would probably be a fast fourier transform, but that method is useless for trading as it takes many cycles before an estimate can be had, and by then the cycle will certainly have changed. The best we can do is get in the ballpark. There are many formulas to try to determine the cycle period. John Ehlers has done much excellent work in this area and I have a link to his website on my resources tab, as well as reference to a couple of his books on my book tab. Many of his formulas are written out on either his web site or in his books, and probably elsewhere on the internet. The formula I'm using in the above chart is from one of his earlier attempts.

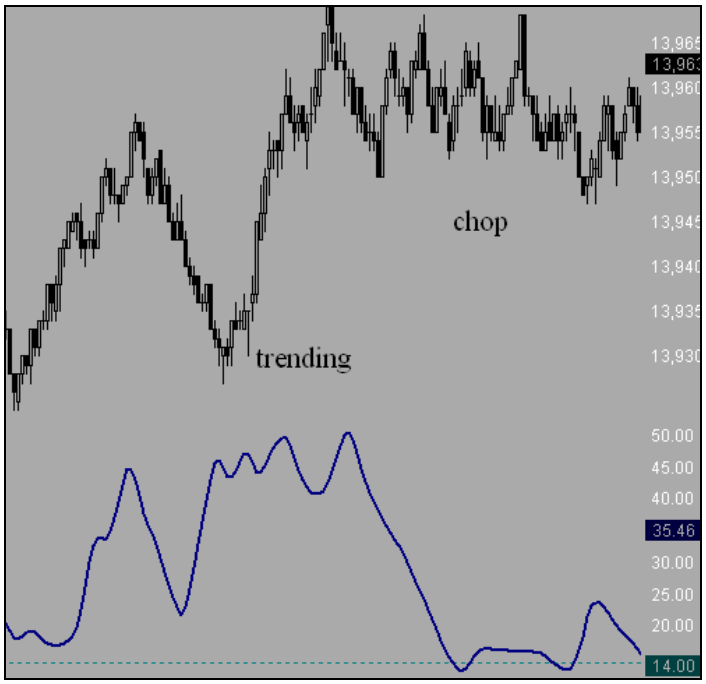

Figure 6: Price Chart and Cycle Period

The Figure 7 chart is another example. See the reference line at the bottom drawn at the 14 level. There is only one instance on this chart where this formula determined the cycle period to be as short as 14 bars. You can see it on the left side of the chart, and if you look up to the price bars you see the

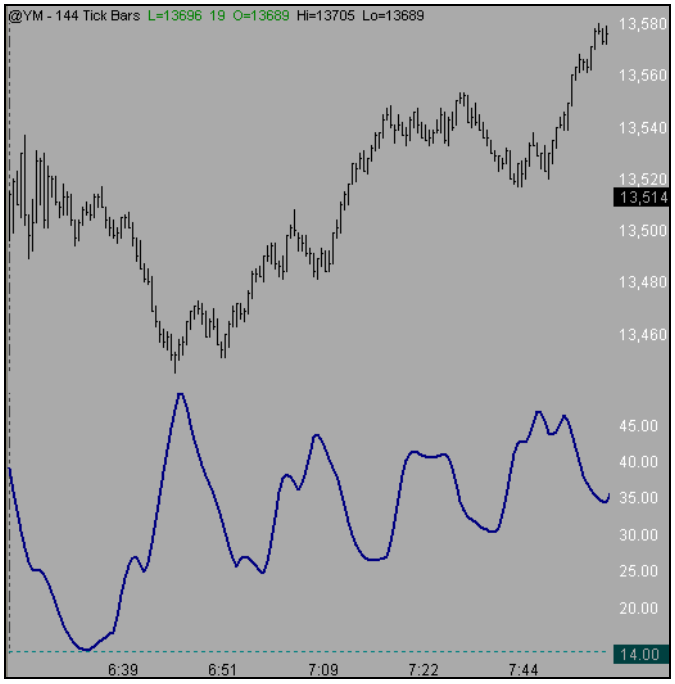

Figure 7: Tracking the Cycle Period Highs, Lows, and Mean

market is in chop for the moment. As prices come out of chop and start to descend you see the cycle period increasing. At that point in the price action the formula doesn't know prices will stop and reverse, thus introducing a cycle component based on the new pivot. In this case cycle period quickly

reverses and returns to a more normal 30 or so. Had prices continued to drop the cycle period would have stayed high. Actually the cycle component would be removed entirely if prices kept going, so it's best to put a maximum and minimum value into the formula. You can see as prices start to make an impulse move the cycle extends to a longer period, and as prices lose direction and flatten or reverse the cycle period shortens.

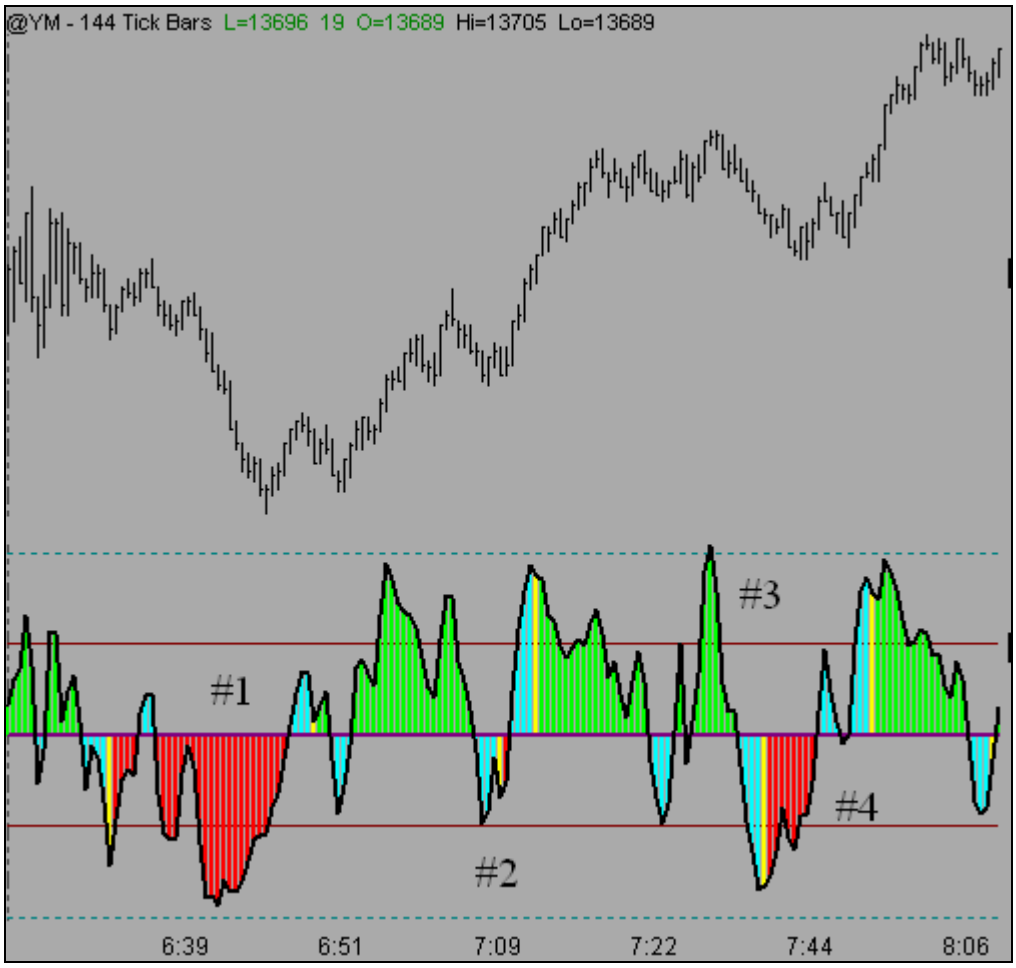

Figure 8: Intraday Tick Chart with standard 14-Period CCI

The Figure 8 chart shows the prices bars with the standard 14 period CCI under it. I used an intraday tick chart for this example. The same principle applies to minute based charts, daily charts, monthly charts, or any chart. The cycles on an intraday chart are a little more erratic than on a daily chart so for the purpose of visual explanation the intraday chart will make the example more obvious to see. I'm not advocating or implying that this method lends itself more to daytrading. In fact the John Ehlers' references are all on daily based charts. I've included some numbers on the CCI subgraph for reference to subsequent charts.

Compare the Figure 9 chart with the previous chart. This is exactly the same CCI formula, but instead of using the static 14 parameter, I used the full cycle period measure from the code that produced the blue line in the first chart at the top of the page. Observe how much more clearly the patterns on the CCI become. At reference #1 the 14 period CCI isn't telling me much of anything, but on the next chart, that I'll refer to from here on as the adaptive CCI, you can see two inverse head and shoulders patterns, one inside the other. Observe the lines drawn on the necklines. The pattern doesn't exist on the 14 period CCI. At point #2 again there isn't much of a signal on the 14 period CCI chart, but on

the adaptive CCI chart there is a nice reversal of momentum as the CCI approaches the zero basis line, giving a good place to enter on the bullflag on the price bars. Point #3 on the 14 period was again a mess, but on the adaptive chart there was a clear divergence with a hook around the 100 line. This played out again at point #4.

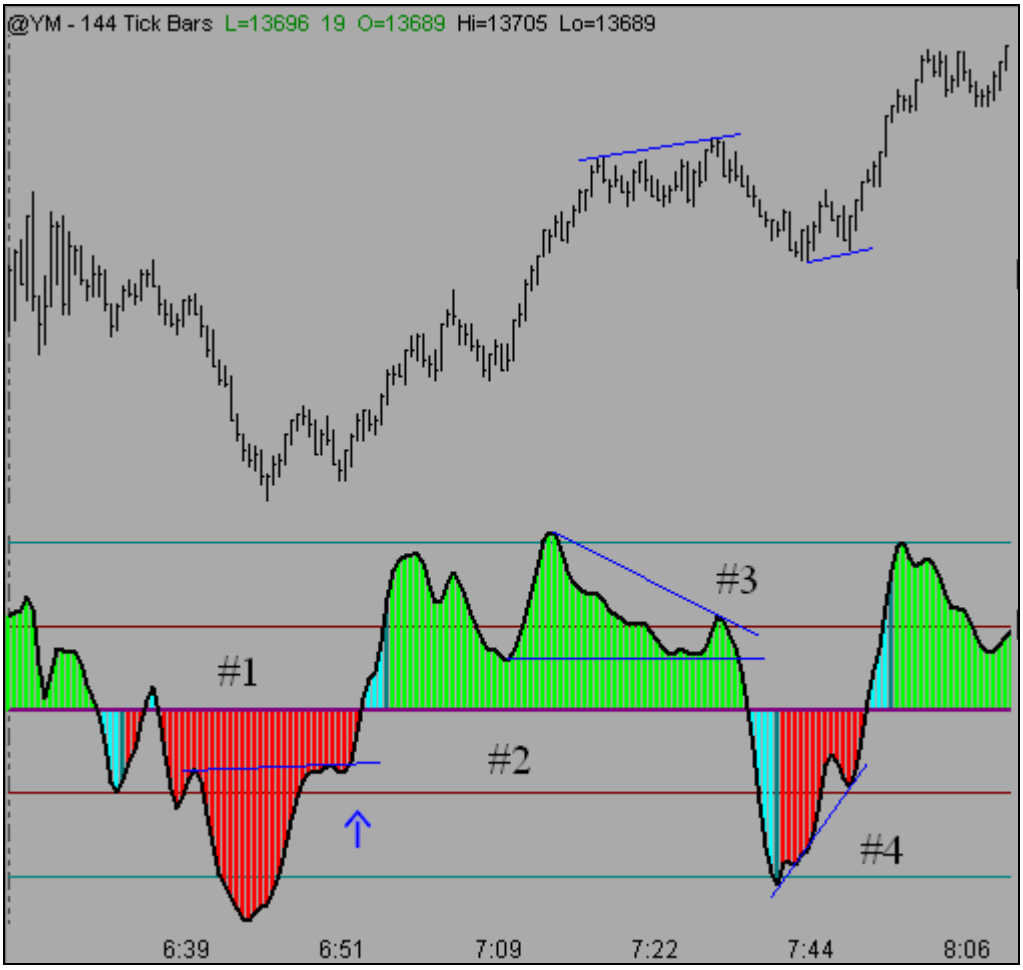

Figure 9: Intraday Tick Chart with Cycle-Period CCI

On the above Figure 9 chart I've taken one more step to help visually clear up the CCI patterns. I've taken the adaptive CCI and smoothed it with a very short term moving average. This takes out most of the little wiggles and creates a much smoother line. But there is a price to be paid for the smoothing as there always is when applying a moving average. There is a little lag. I find about half the time by smoothing the CCI the signal will be delayed by one bar. The other side of the coin is there are far fewer whipsaws. I have more to say on this subject in the next article, which is on application of the CCI. The type and length of the moving average should be chosen based on how smooth you want the CCI to be based on your own experimentation.

On the Figure 10 chart in the upper subgraph you'll see the same adaptive CCI that has the moving average component. In addition I added a second moving average, the blue line, as a signal line, much like the signal line in an MACD. In the bottom subgraph I detrended the CCI on that moving average, so the zero line on the indicator in the bottom subgraph is the same as the blue line on the CCI in the top subgraph. It's as if I pulled the blue line in the top graph like a string so it's tight. Then the CCI line readjusts itself around the moving average. This method has some application when trading divergences. For example, observe the inverted head and shoulders after point #1. You can

see on the right shoulder that the detrended CCI on the bottom was already positive and gave a clear reversal up when the CCI in the upper graph broke its neckline. Point #4 was also confirmed in a similar way. Point #3 had gone slightly positive for only a couple of bars, but the detrended CCI had been under the zero line for some time as that divergence was forming. The detrended CCI did not help the signal at point #2. Again, this method of detrending is only useful as confirmation for some types of signals. I offer it here as something to experiment with, however you might not find it to be of enough use to warrant taking up screen space, unless you trade divergences, or patterns that have a divergence component.

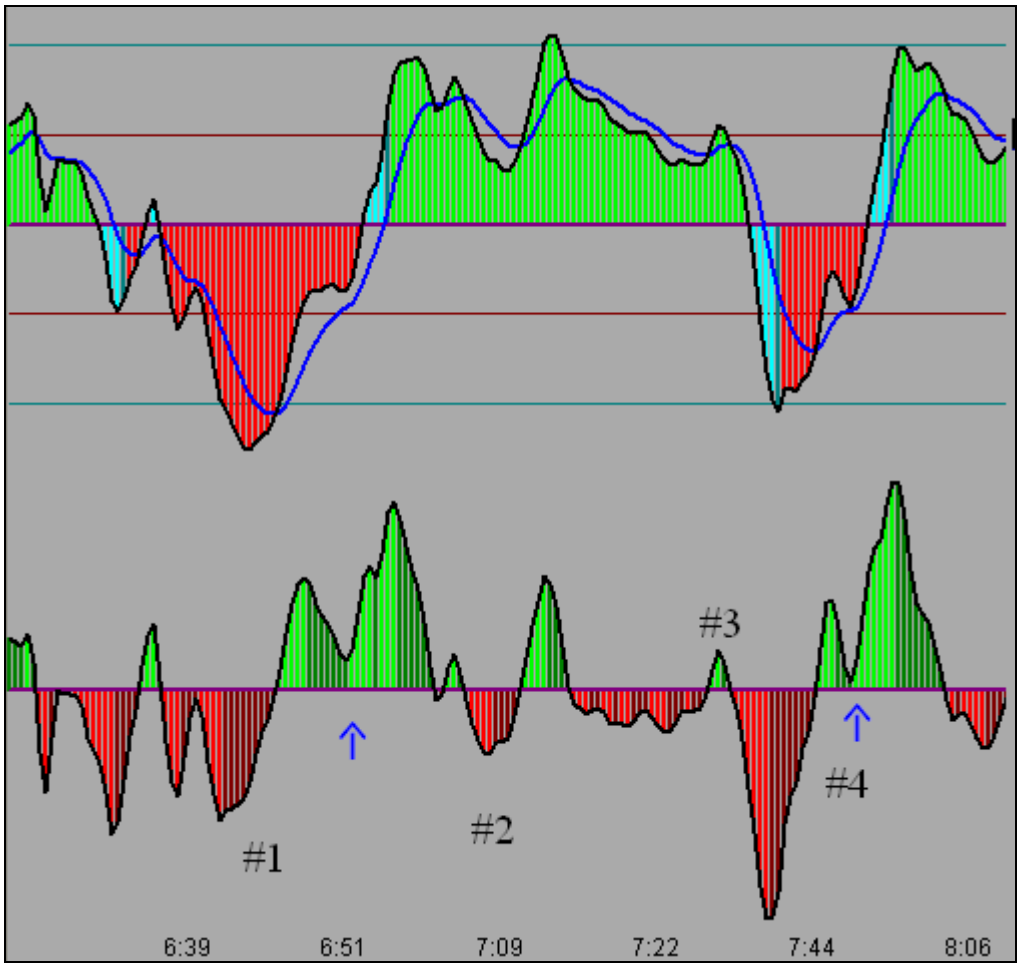

Figure 10: Comparing Normal and Detrended CCI

The Figure 11 chart below is a recap of where we started, with the 14 period CCI in the top subgraph, and the smoothed adaptive CCI in the bottom subgraph. Personally, I can't make any sense of the CCI on the top subgraph, but the CCI on the bottom has some nice clean patterns that I can see at a glance.

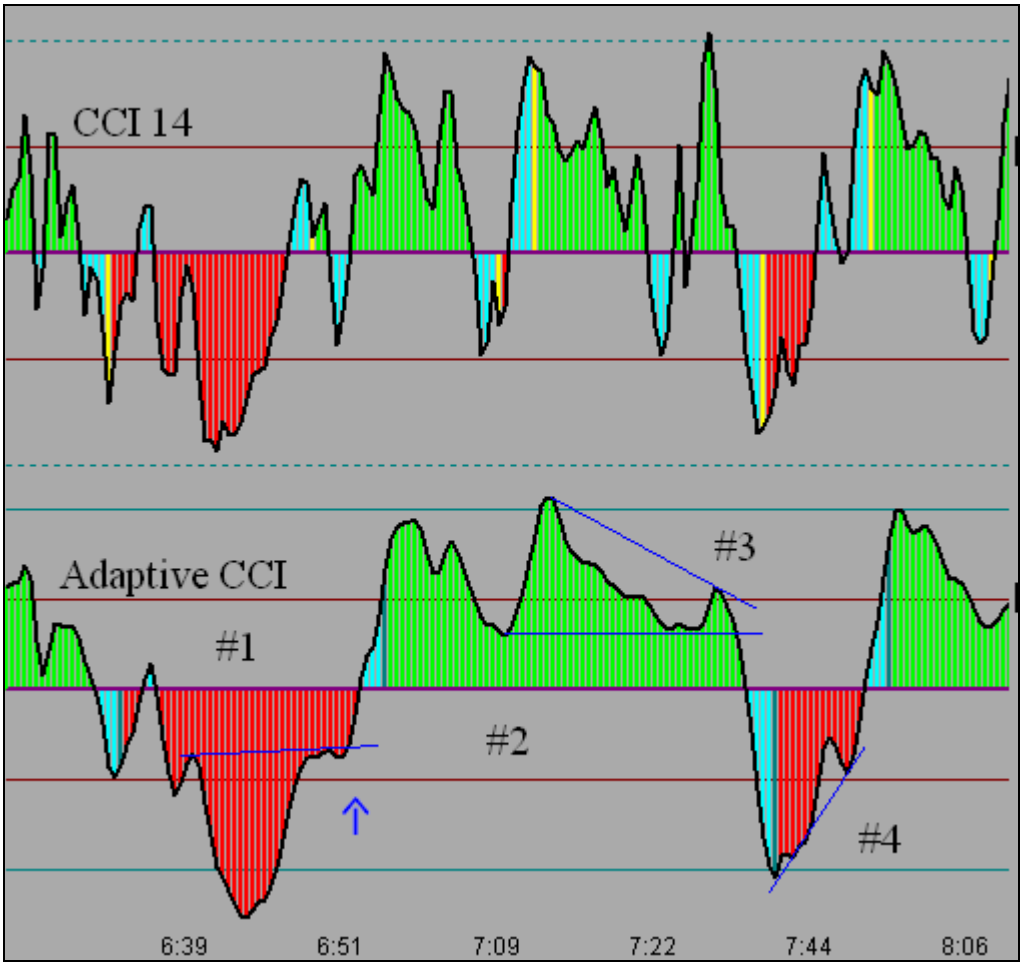

Figure 11: Standard and Adaptive CCI Comparison

CCI – Application and Examples

This article will demonstrate a few of the ways the adaptive CCI can be used to trade. There are many chat rooms and web sites that deal with this one indicator. Most are derivative of the one main room that promotes using this single indicator. While this main room claims to have discovered certain patterns using the CCI, most of these patterns have been talked about for many years by other technical analysts, perhaps not using the CCI, but using another indicators triggering similar signals. Therefore, there is much information available to study regarding patterns on indicators.

The two preceding articles on the CCI explained the basic structure of the indicator and the need to have the proper input parameter. When I began using this indicator, mostly for trading intraday charts, I felt the main chat rooms were way off base in their understanding of this indicator for all the reasons I described in the first two articles. My first attempt at improving the indicator was to plot several different parameters, such as 21 period, 34 period, 89 period, etc. I stuck with Fibonacci numbers just to keep the choices manageable, not because I believed there was any special power to these numbers. I thought I could spot the cycle and its corresponding parameter and just trade that particular version. There is something to be said about keeping the parameter consistent. But after much testing I found I was more trusting of an adaptive technique where I only had to watch one CCI and let the computer estimate which cycle length was dominant.

Another thing became clear, and that is: one indicator can't do everything. But too many indicators will cause confusion. There's a balance of what you can watch and react to. If you are a daytrader you

need fewer indicators because you don't have time to over analyse. The trade will pass you by. If you are a position trader you have more time, but still too many indicators can cause analysis paralysis. And, you can always find some indicator that will give you the answer you want based on your bias.

For now, I will focus on this one indicator, although I don't trade with just what I'm going to present on these charts. Since this is an article on application of the CCI it would be confusing to show other indicators and then try to explain their useage at the same time. I will have an article in the future that puts all the elements together. But the following patterns are the basis of what I look for when I analyse a market using the CCI. There is much more to consider before a trade can be put on, such as overall trend direction, trend strength, etc. So please don't use these examples out of context. They do not represent a complete trading approach.

The CCI that I use on a daily basis is a combination of the adaptive CCI along with smoothed version of the CCI, as described in the previous article. This is done to help smooth out the bumps so I can get a better picture of the pattern that is setting up. The adaptive CCI does filter out much of the noise, but the smoothed version filters out even more, with very minimal lag. I plot the smoothed version as a thick black line along with the histogram bars that change color depending on the trend. I usually plot the unsmoothed adaptive CCI as a thin blue line, although in some of these examples the unsmoothed line will be thicker yellow line to make it easier to see on the smaller charts.

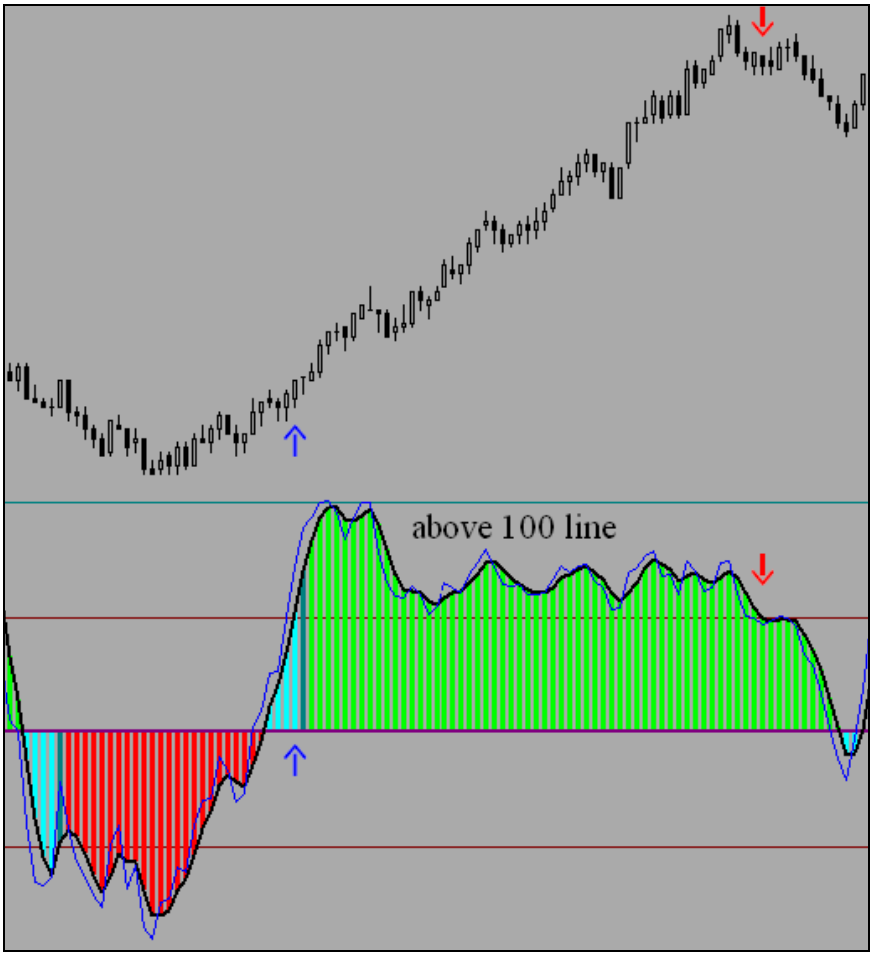

Figure 12: Smoothed Adaptive CCI with above 100 Trend Mode

When Lambert created the CCI his idea was to trade excursions outside the one hundred lines. In actual testing in the early days, back in the early 80's when the PC and trading software started

appearing, the results of doing this were so bad that most technicians reversed the rules and started trading crosses back into the hundred lines. If only 20% of the prices would go beyond the hundred lines, it made sense to trade when the CCI crossed back inside where 80% of the prices were to occur. Of course they were using a static parameter in those days. If they could have extended the parameter as the cyclic component started to abate as it does when a trend appears, Lambert's original idea may have gained more of a following.

The Figure 12 chart above is the smoothed adaptive CCI along with the thin blue line, which is the basic, unsmoothed adaptive CCI. The point of showing this chart is to demonstrate how, with the correct cycle and input parameter, the market will stay in a trend mode as long as the CCI is beyond the 100 line, as perscribed by Lambert. It didn't catch every tick out of the trend, but it did do a very good job. All divergences should be ignored as long as the CCI is over the +100 line in an uptrend, or below the –100 line in a downtrend. In this example I'm sure there are many other methods, such as a simple moving average, that would have also kept you in this trend. In this case prices stayed over about one and a quarter standard deviations above the moving average that represented the cycle in play (meaning the 100 line represents about 1 ¼ SD).

In this chart I changed the raw adaptive CCI color to yellow and made it thicker for clarity. The pattern inside the pink ellipse is a micro M pattern. I don't trade these types of momentum reversals if they are against the main trend, which I determine with other indicators. But for this example I'll assume that I did want to go short this market. If I just relied on the basic adaptive CCI , I may have gone short on the first downturn, or the left side of the M. I find it dangerous to go short on the unsmoothed CCI momentum reversal if the smoothed CCI is still trending up. On the second reversal, the right side of the M, the smoothed CCI turned down resulting in a much safer entry point.

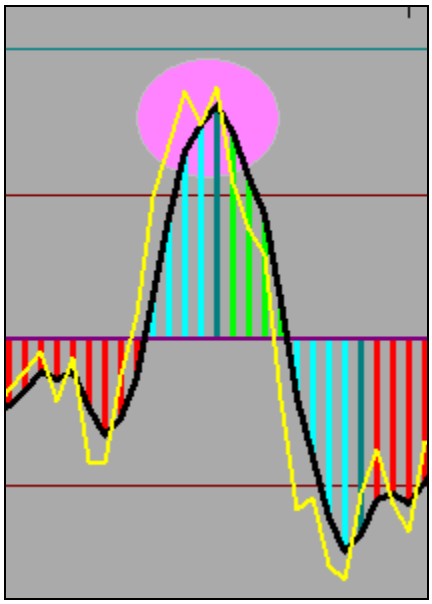

Figure 13: Micro M Pattern at Top

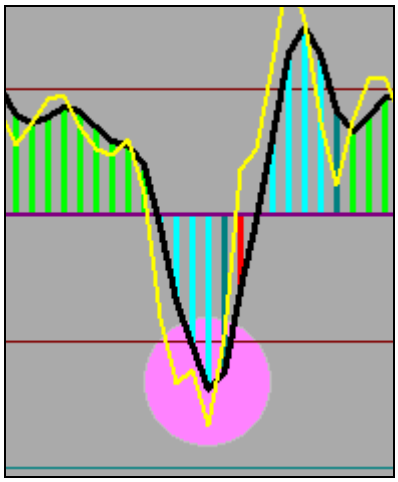

Figure 14: Micro W Pattern at Bottom

In this Figure 13 chart I changed the raw adaptive CCI color to yellow and made it thicker for clarity. The pattern inside the pink ellipse is a micro M pattern. I don't trade these types of momentum reversals if they are against the main trend, which I determine with other indicators. But for this example I'll assume that I did want to go short this market. If I just relied on the basic adaptive CCI , I may have gone short on the first downturn, or the left side of the M. I find it dangerous to go short on

the unsmoothed CCI momentum reversal if the smoothed CCI is still trending up. On the second reversal, the right side of the M, the smoothed CCI turned down resulting in a much safer entry point.

Figure 14 is another example of the micro pattern but in the other direction. This would be a micro W on the unsmoothed adaptive CCI. When it finally turned up again on the right side, the smoothed version turned up as well, resulting in a much better and safer trade.

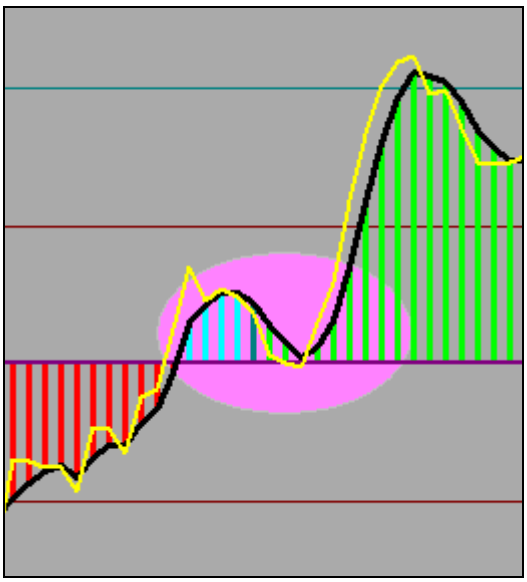

Figure 15: First Pullback in the Trend

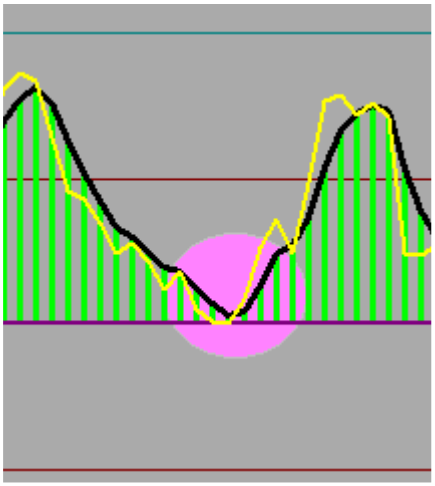

Figure 16: Steep Zero-Line Reject

Perhaps the best and safest trade is the first pullback (Figure 15). I first learned of this concept from Linda Raschke. She favored trading the first pullback after a trend appeared. She offers a few variations. Her grail trade is a pullback to a moving average. She trades bull flags with various triggers such as by using her 310 oscillator. This CCI trade is essentially the same type of trade. When the CCI bars, as defined by the smoothed adaptive CCI, have been on one side of the zero line and then the CCI goes to the other side of the zero line, one can enter on the first pullback to the zero line as momentum shifts back in the direction of the trade. In this example the bars turned green, then pulled back to the zero line, and then on the first CCI uptick a long trade can be entered. I use the smoothed line as the signal, but prefer to have the unsmoothed CCI line lead the way up. In this example they both turned on the same bar. In some cases the unsmoothed line will turn first, and the following bar will show the smoothed line turning. The zero line reject (Figure 16) is somewhat different, as that will require, from the basic rules using a 14 period CCI, a high level of the CCI, usually over the 100 line, preceeding the pullback to the zero line. With the static 14 or 20 CCI you get many of these, and most result in losses. With the adaptive CCI it is common to have this setup, but without the need for the CCI to first have been at a high level. There are many continuation trades that do have the adaptive CCI coming from a high level, put in the case of the first pullback it is not required.

The Figure 17 pattern is simply three drives to a bottom. Sometimes it's three drives to a top. The best patterns seem to occur when the three CCI lows create a divergence with price. In the case of a bottom, three lower lows on price and three ascending, or higher lows on the CCI. Sometimes the divergence is create with the first and third low and the middle low falling somewhere in between. In some chat room this concept is only traded when the second low is the lowest of the three, which

would be a head and shoulder pattern. I find those to be less reliable in general. When I do see them I prefer to also use the detrended CCI as confirmation. Examples of this will follow.

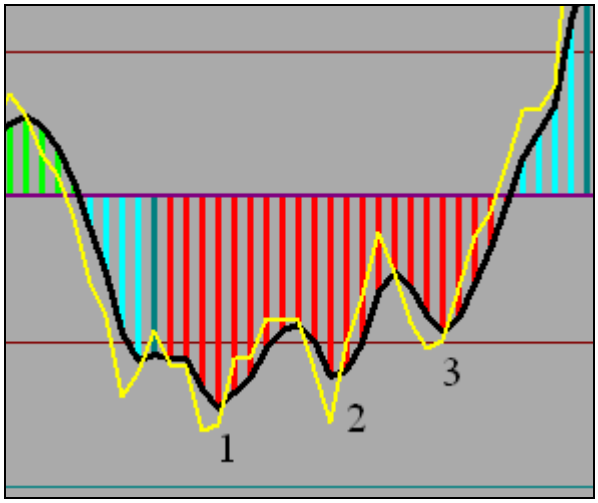

Figure 17: 3 Dives to the Bottom

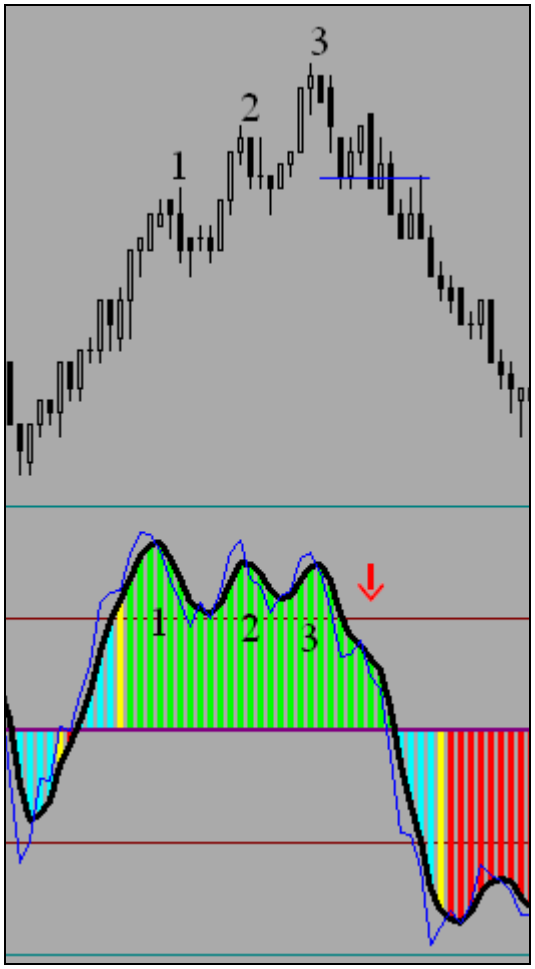

Figure 18: 3 Dives to the Top

Figure 18 is an example of three drives to a top. Here I have the unsmoothed and smoothed adaptive CCI. The CCI is like a flat head and shoulders, while there are three very distinct impulses up. On the right side on the price bars, where I drew the horizontal blue line, you can see a slight attempt for the market to push back up, but the CCI was already heading to new recent lows. When the kink in the raw link turned back down in the direction of the smoothed line, the market made a nice move to the downside. Not all of these reversal trades work this nicely. Reversal patterns are the most unreliable and difficult to trade. It is always easier and safer to trade in the direction of the trend.

The Figure 19 pattern is the hook around the zero line. It has a different name in various chat rooms. I find it to be an excellent pattern. In this example the unsmoothed adaptive CCI is making the hook while the more stable smoothed adaptive CCI is trending in one direction. If find these especially powerful. Sometimes the smoothed adaptive CCI will be dominant in making the hook.

Figure 20 is an example of the micro M top from near the extreme 200 line (the left ellipse). If one missed this entry, or passed on it because the trend was still up, the next chance to get in on the downside was a slight hook of the unsmoothed CCI near the zero line. I didn't highlight this as it was quite subtle. The more realistic trade was the first pullback, in this case a pullback up toward the zero line, which is highlighted with the ellipse on the right side of the chart.

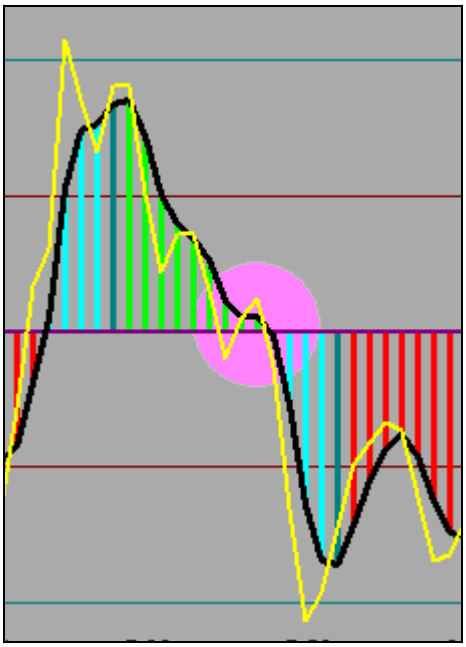

Figure 19: Hook around the Zero Line

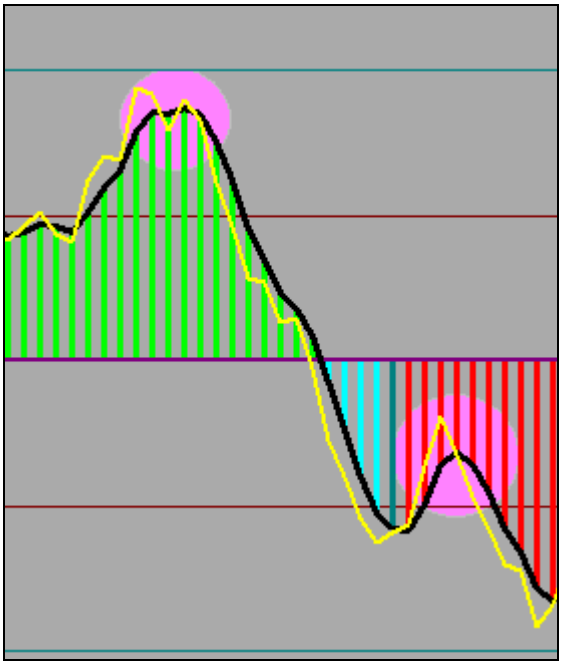

Figure 20: Micro M Top with Slight Hook Near 0

Figure 21 is a micro M and a zero line reject combination. There was also a kink in the unsmoothed adaptive CCI against the declining smoothed adaptive CCI. I don't often take these, but when I see them they can influence a continuation of a trade, or sometimes be part of another pattern. It is marked with the red down arrow. If I had taken the zero line reject and prices failed to move in the anticipated direction within a few bars, I might be tempted to exit the trade. However, when I see this kink in the unsmoothed CCI in the direction of the smoothed CCI, I will assume that the momentum will continue in my direction and that prices should follow. Sometimes there is a series of these zig zagging kinks against, and then with, the direction of the smoothed line. That probably signifies a choppy environment so I will go with the flow, but will keep my finger close to the mouse button.

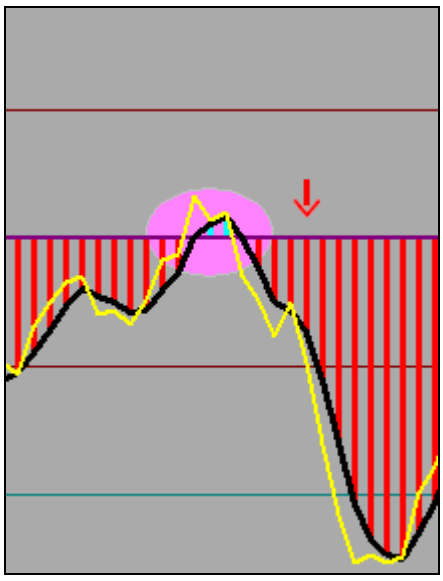

Figure 21: Micro-M Zero-Line Rejection

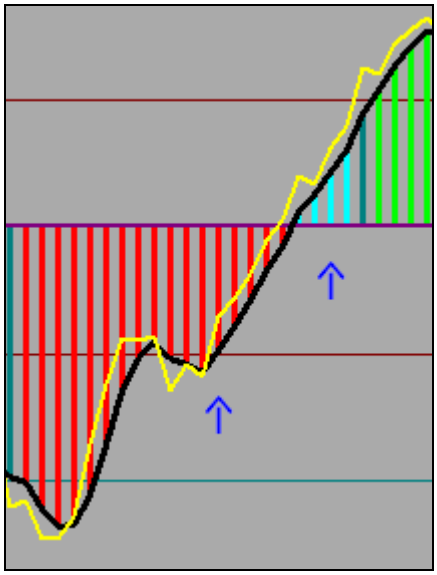

Figure 22: Micro W with Zero-Line Hook

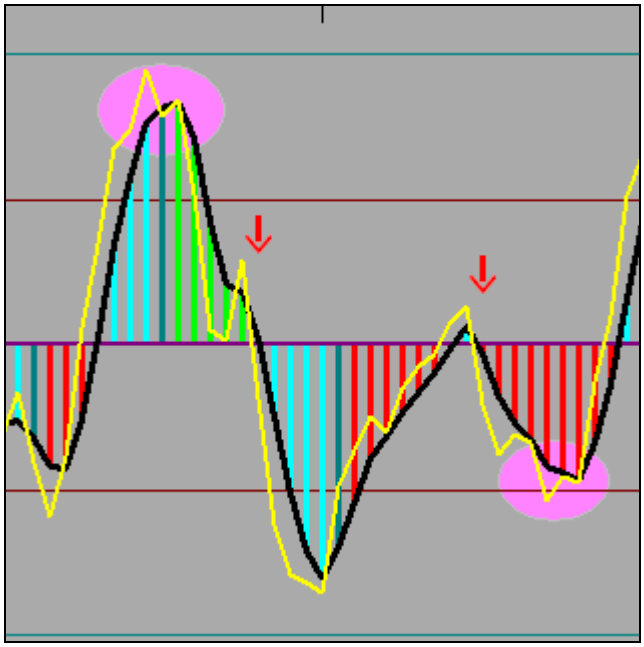

Figure 23: Multi Patterns Example

Figure 22 is another example of the micro W, probably with divergence (but don't have prices up to be sure) and a hook around the 100 line, as denoted by the first up arrow. The second up arrow is another kink of the unsmoothed CCI in the direction of the smoothed CCI.

Figure 23 exhibits many of the previously discussed patterns. The left ellipse is a micro M, followed by a hook of the raw CCI around the zero line in the direction of the smoothed CCI (first red down arrow). Following is a near perfect zero line reject that triggered via the unsmoothed and smoothed CCI on the same bar (second red down arrow). Finally there is a micro W with divergence (the rightmost ellipse).

Figure 24 chart is an example of the smoothed only version of the adaptive CCI with prices. There was an up zero line reject to the left when the histogram was green. But more important was the first pullback after the trend had evidence of being down, as the histogram turned red. This is my favorite trade. Notice how prices made a halfway attempt at a rally before giving up and falling. The smoothed adaptive CCI caught the move nearly perfect. The following examples will display only the smoothed version of the adaptive CCI for clarity. I usually have the unsmoothed version on my charts, but it is displayed only as a faint blue line. Sometimes I prefer the simplicity of only having the smoothed version in my charts.

Figure 25 is another example of a first pullback after the trend turned down. This one went a slight bit over the zero line. Nothing is perfect, but this is nearly perfect.

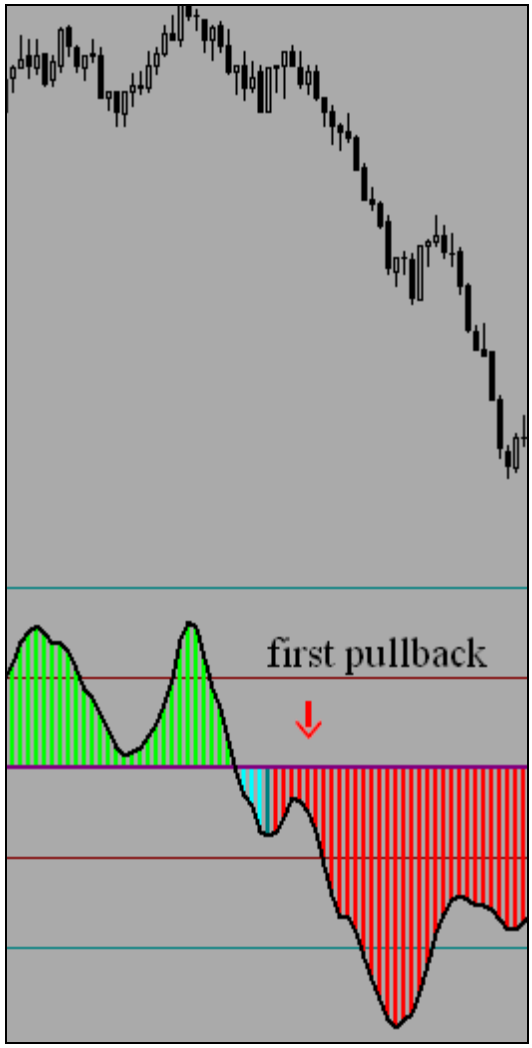

Figure 24: 0-Reject and Down Trend 0 Pullback

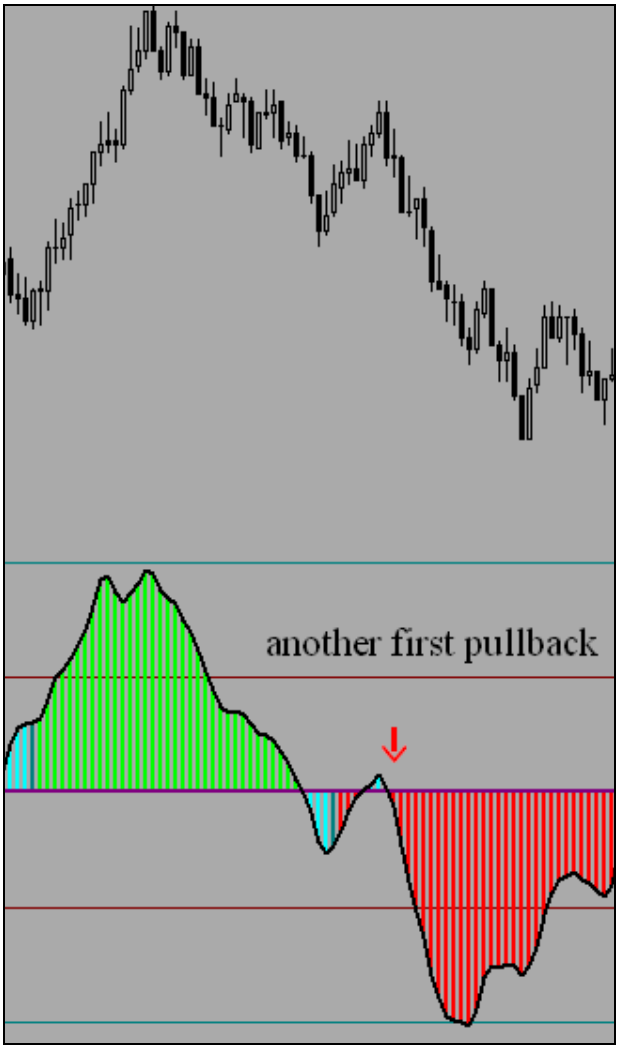

Figure 25: First Pullback

Returning to the three drives pattern, Figure 26 (next page) shows how I often use the detrended smoothed adaptive CCI for confirmation. Notice on the leftmost three drive pattern that the CCI had a divergence pattern, but the lower subgraph, with the detrended CCI, shows a very clear higher level on each of the three drives. The bars turned positive long before the CCI. On the third drive I prefer to see the detrend stay in the green. In this case it went slightly negative, but was close enough to confirm the third drive. The three drive pattern on the right is a bit more perfect. The CCI formed more of a head and shoulders, but notice how the detrended CCI (bottom subgraph) had a very high level at point 1, much lower level at point 2, and had long been red and negative by point 3. The smoothed CCI did stay over the +100 level when this occurred, so I would have waited until the CCI returned to under the 100 line.

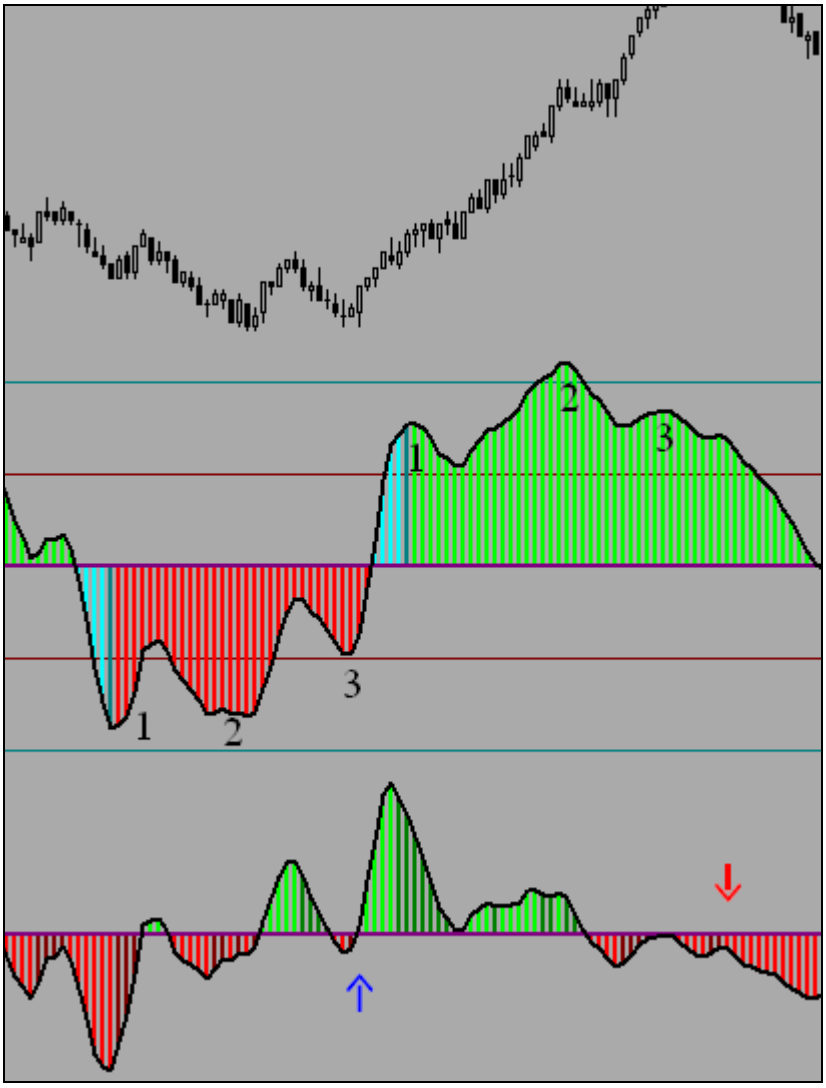

Figure 26: 3 Drives confirmed by Detrended Smoothed Adaptive CCI

Figure 27 (next page) shows a first cross down, followed by a first cross up. The down signal didn't produce much price movement. You never know the extent of the move that will follow a signal. Sometimes that gives you a clue that the next signal in the opposite direction will work out better. In this case it did.

Figure 28 shows the detrend. Shown are two examples of divergences with confirmation via the detrend. The sell divergence on the left side the detrend went just a hair to the positive before turning down, but was close enough. This isn't an exact thing. You have to allow for a little room, as long as the concept is there. On right side example the detrend stayed in the green for the buy confirmation.

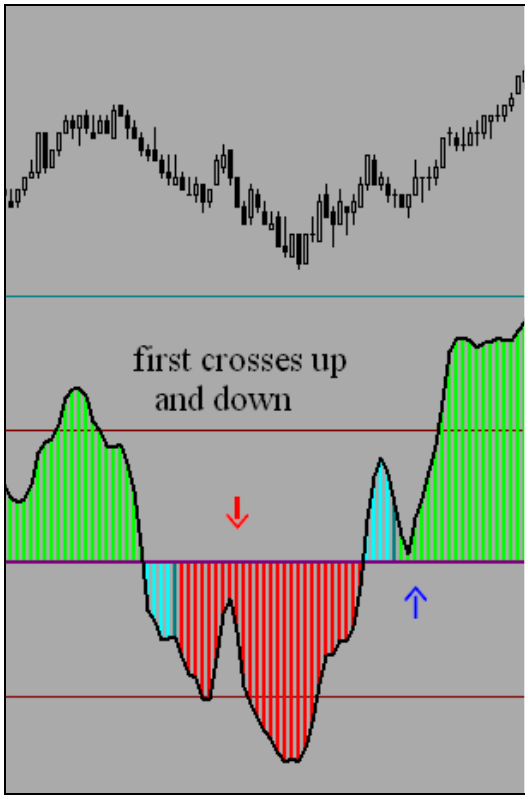

Figure 27: Zero Line Crossings

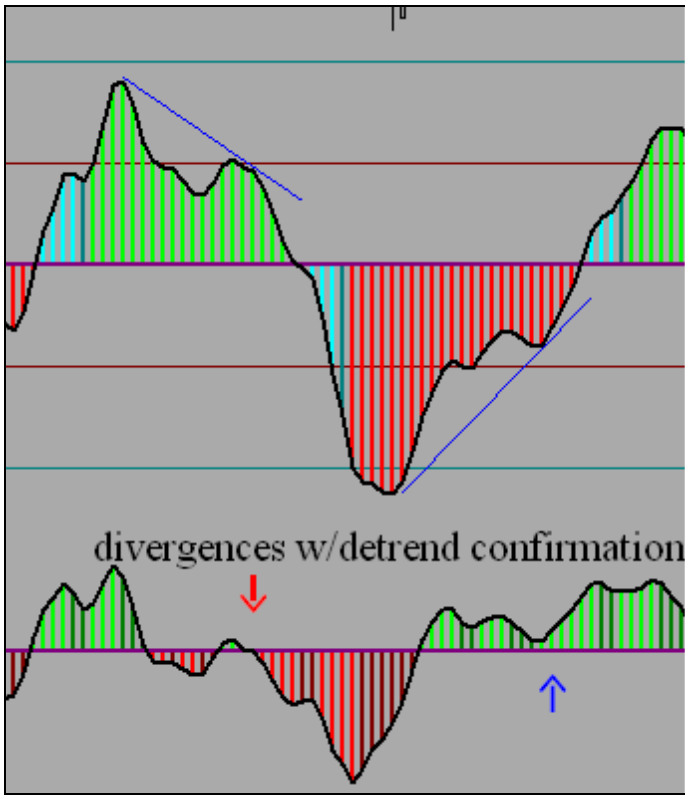

Figure 28: Divergences Confirmed by Detrended CCI

Figure 29 (next page) is a bear flag that broke to the downside. As a pure chart interpretation, just looking at the price bars, it might have been possible to see this in real time. It is always very clear after the chart is drawn, but while the pattern is developing it can be difficult to spot, especially if you are daytrading. The zero line reject made the pattern much easier to spot. The CCI only got about halfway to the zero line, but the reversal in momentum made this a valid trade. In the middle of the CCI was the three drive pattern I referred to earlier, where the divergence was between the first and third pivot, with the second pivot in between the two. Another reject occurred within this pattern, without much follow through in price. The three drive pattern was followed by a classic first pullback with a nice follow through in price.

The left side of the Figure 30 chart, CCI shows a first pullback, and then in the middle is another first pullback to the upside, followed by a zero line reject. The reject went a bit below the zero line, but the trend of prices was clearly up. Rejects after the first pullback can be a little less reliable. They become more and more unreliable the more they occur within the same trend. There are other indicators to watch as a clue as to when it is getting late in the game. One method is the use of standard error bands that I discuss in another article.

CCI

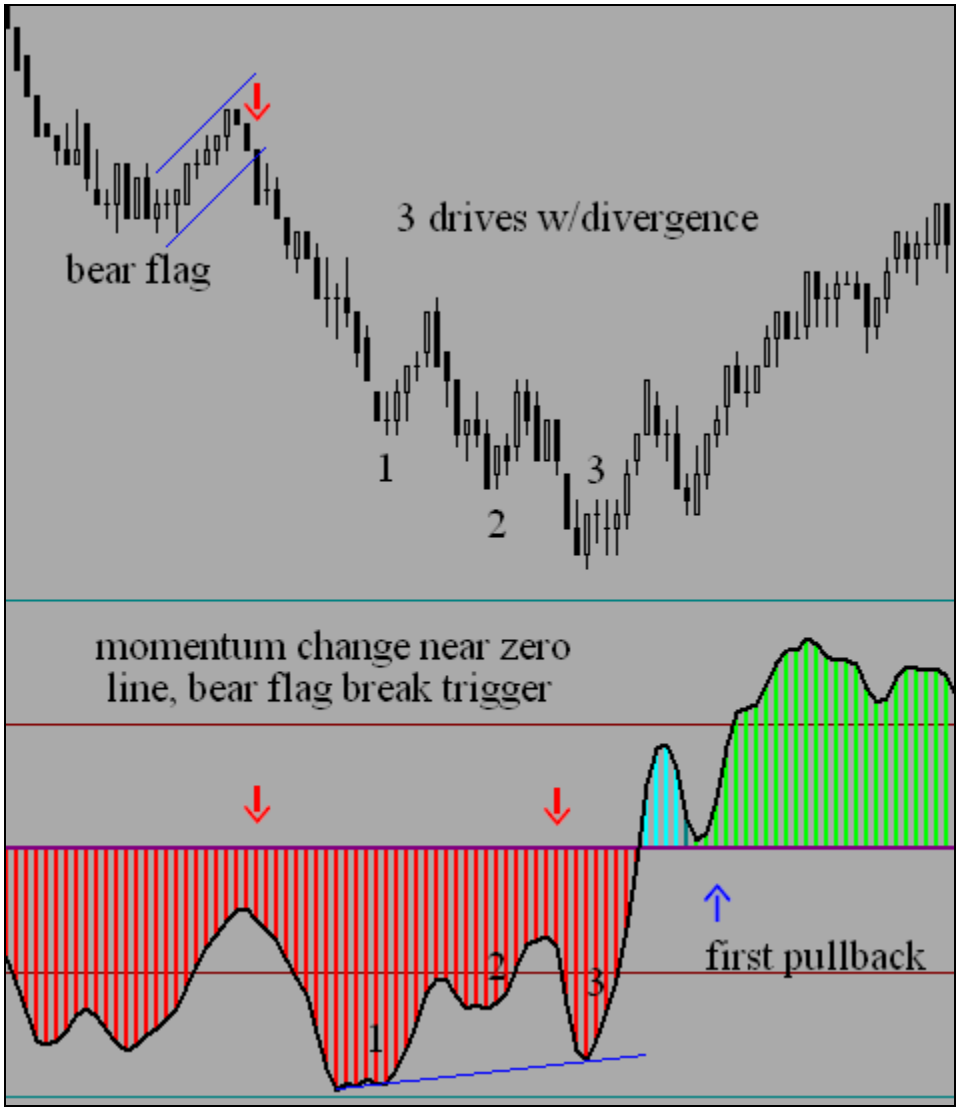

Figure 29: Chart Patterns Include Bear Flag, 3-Drives, Divergence, and First Pullback

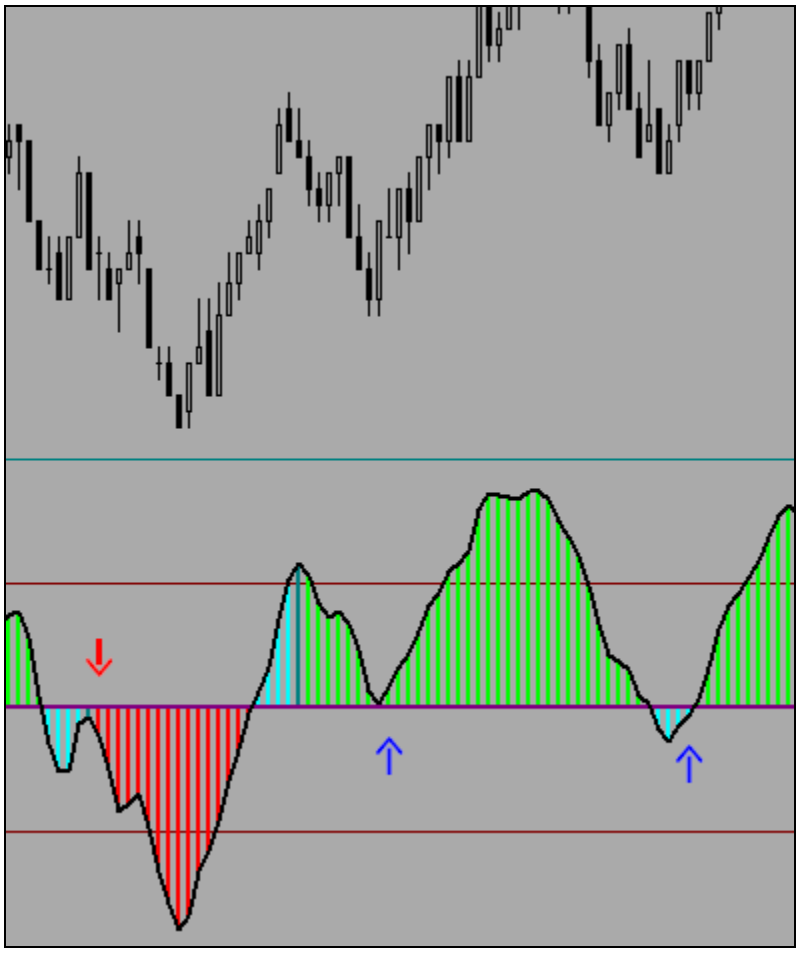

Figure 30: First Pullbacks and Zero-LIne Rejection

Figure 31 is another three drives pattern, this time with another head and shoulders on the smoothed adaptive CCI, with a confirming CCI detrend with three higher bottoms. It was followed by another first pullback, which is no surprise as they will often follow the three drives pattern.

Figure 32 is an interesting pattern. The detrend CCI displays the head and shoulders formation with the right should break occuring right as the smoothed CCI is sitting on the extreme 200 line. I would only view this as a warning at this point. I don not go short if the smoothed CCI is still above the 100 line, and in this case it is at the 200 line showing extreme upside momentum, although overbought. When the smoothed CCI finally broke below the 100 line it was accompanyed by a reversal under the zero line by the detrended CCI. Price followed down shortly thereafter.

The examples and ideas presented here are not meant as a trading system. An indicator just indicates the possibility, but there is no assurance that any of these patterns will result in a successful trade. You must do your own research and tabulate your own stats to gain confidence in your trading. I have been purposely vague in giving exact formulas and parameters. That is an area of research you need to do on your own charts, on the markets you trade, and for your own, personal trading style. My parameters and stats won't help your trading. It takes a lot of time and effort to put a trading plan together. I'm hoping just to encourage and inspire some ideas for your own research and testing.

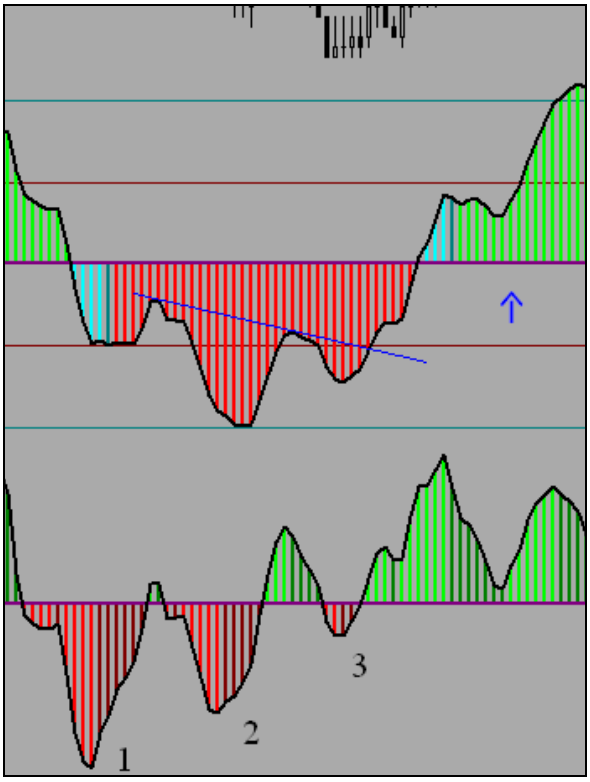

Figure 31: 3-Drives on Detrend with Adaptive CCI Head and Shoulders

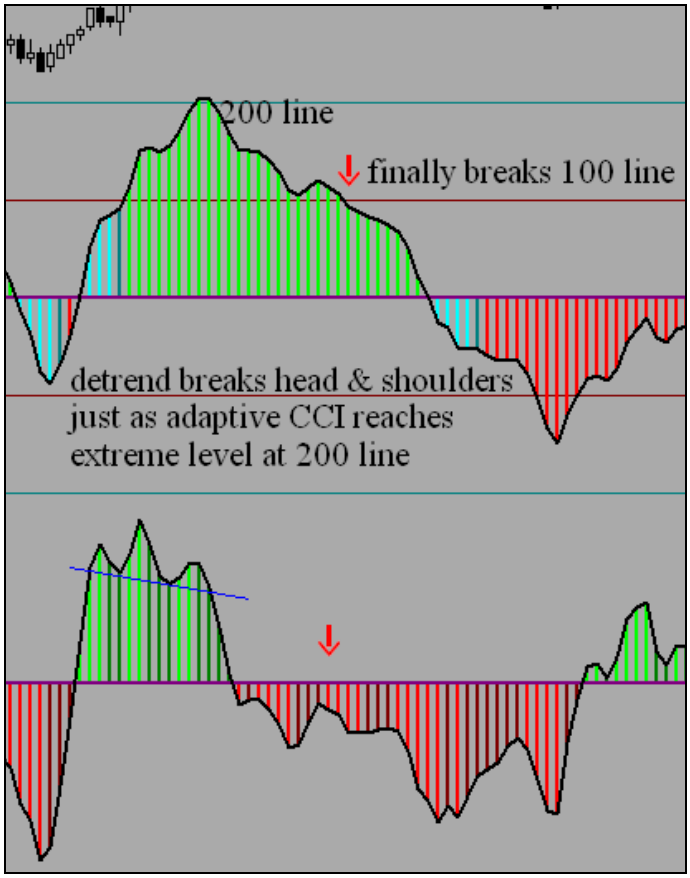

Figure 32: Multi Pattern Signals