

A Useful Pairing – The Development of the SELECTOR® Trend Reversal Indicator

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By

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Abstract

My search for an effective trend reversal indicator began in the fourth quarter of 2011 as U.S. and global equity markets were completing one of the most volatile six month periods on record. As a thirty-year-plus veteran of technical analysis and the chief investment officer of my firm, I am well versed on established and accepted portfolio management techniques. I maintain well-diversified asset allocations, and am mindful of dominant and secondary trendlines, moving averages, support and resistance levels, and classic measures of momentum. I utilize a variety of fundamental and technical tools in monitoring financial markets.

Unfortunately, none of those tools prepared us, nor adequately defended us, from the stunning volatility and dramatic portfolio drawdowns that occurred in the second half of 2011. By the end of the year, despite the price recovery, I remained shocked, perplexed, and a little angry about what had just transpired. High frequency trading was identified as a probable suspect, but after global regulatory review, nobody was blamed nor reprimanded. Rather, as an investment community, we were informed by federal and international securities regulators that this is just another dimension of investing in today's world. The liquidity-at-any-cost event tail could indeed shake the beejeesus out of the dog and the dog would have to get used to it, as would investors

and investment professionals. The stark reality was that the only way to have avoided the shakedowns and the drawdowns was to have been out of equities. It is well documented that the once sacred mantra of implementing non-correlating asset allocations as suggested by the modern portfolio theorists was no longer effective in managing portfolio volatility. Correlation between domestic and international equities has never been higher. Large, Mid, and Small Cap equities rise and fall in complete cadence with one another. Even traditional risk-on, risk-off sector rotation fails to buffer the impact during dramatic capitulations in equity prices, especially during high frequency trading episodes.

During the 2007-2009 Bear Market, bonds demonstrated that they, too, could correlate with equities under the proper conditions. But their declines were significantly shorter-lived than equities. They recovered quicker and their usefulness in managing portfolio volatility, although tarnished, quickly regained its luster as the Bear Market progressed into 2008 and 2009. I respect the ongoing utility of bonds in managing portfolio volatility. This was clearly demonstrated in 2011, when bond markets efficiently absorbed capital while equity markets writhed in high frequency trading anguish. I needed to identify specific criteria that would be consistent and actionable in assisting in making the decision to step away from equities. I didn't want to be strapped to the mast as the ship was tossed in a storm. And I also didn't want split-second signals

with rapid fire reversals. I needed a signal, an indicator, that could with reasonable reliability provide me with an adequate opportunity to protect portfolios from unacceptable volatility and dramatic drawdowns.

I chose to go to the scene of the crime, as depicted by price charts, and apply a crime scene investigator (CSI) approach towards determining the events leading up to the exact moments of the markets' breakdowns. In addition to the usual subjects, I would canvass the area and interview all of the bystanders, searching for potential witnesses. This meant analyzing the charts with not just my traditional technical indicators and oscillators, but also overlaying those charts with every flavor of indicator I could access. My CSI kit was provided by StockCharts.com. As a long-time subscriber to this online technical analysis service, I utilized tools that I had grown familiar with over the years. StockCharts.com incorporates a generous educational approach to technical analysis. It provides a panel of experienced market technicians who regularly discuss their own approaches, as well as introduce new approaches. It also offers a broad menu of indicators (16) and overlays (40) and instructions on their use. This service would provide additional tools for my analysis and the guidance on how to use them. These indicators and overlays were the bystanders that I would be interviewing in my search for witnesses.

Stochastic RSI – The first witness

My search started with studying 2011 charts, in particular the S&P 500, MSCI EAFE, and Russell 2000 charts. I prefer three-color candlestick charts as my principle medium because of the recognition features of open and closed candlesticks. The process begins with inserting support/resistance lines, followed by primary trendlines, if any, then secondary trendlines. The charts include 50 and 150-day moving averages. This is all pretty basic analysis. I started my search by adding the overlays and indicators, one by one, that are offered from StockCharts.com, which currently includes 16 overlays and 44 indicators, with numerous additional customizable options for each.

It should also be stated here that I am a believer in the power of price when evaluating and managing variable securities. Today, the internet guarantees that virtually everyone has access to the same information at almost exactly the same time, with the same resources to react to news, price changes, and emotional response. Inefficiencies may exist for very short periods of time, but professional investors have become extremely effective at arbitraging inequalities out of the publicly traded securities markets. To believe in the truth of price is to become a student of price changes over time, which in effect is the art of technical analysis. To revert to my CSI

example, all of the evidence is there. You just need to know how to discover, how to sample, and how to interpret what is right in front of you. Those who become the most efficient at this process enjoy the possibilities of becoming the most efficient traders, and potentially the most profitable traders. It is my goal to travel in the company of these most efficient and most profitable traders.

As a devoted trend follower, I recognize that technical indicators which have been developed to analyze changes in trend and momentum offer particular attractions. Two of the more widely followed are Stochastics and Relative Strength Indicators, which have proven their value to the technical analyst community. Unfortunately, tracking these indicators can be like tracking spaghetti through the sauce. It is easy to become tangled up and confused on exactly where the intersections exist and how to anticipate them. I was searching for indicators that were easily recognized and whose signals had good persistence, preferably lasting for several weeks rather than for several days.

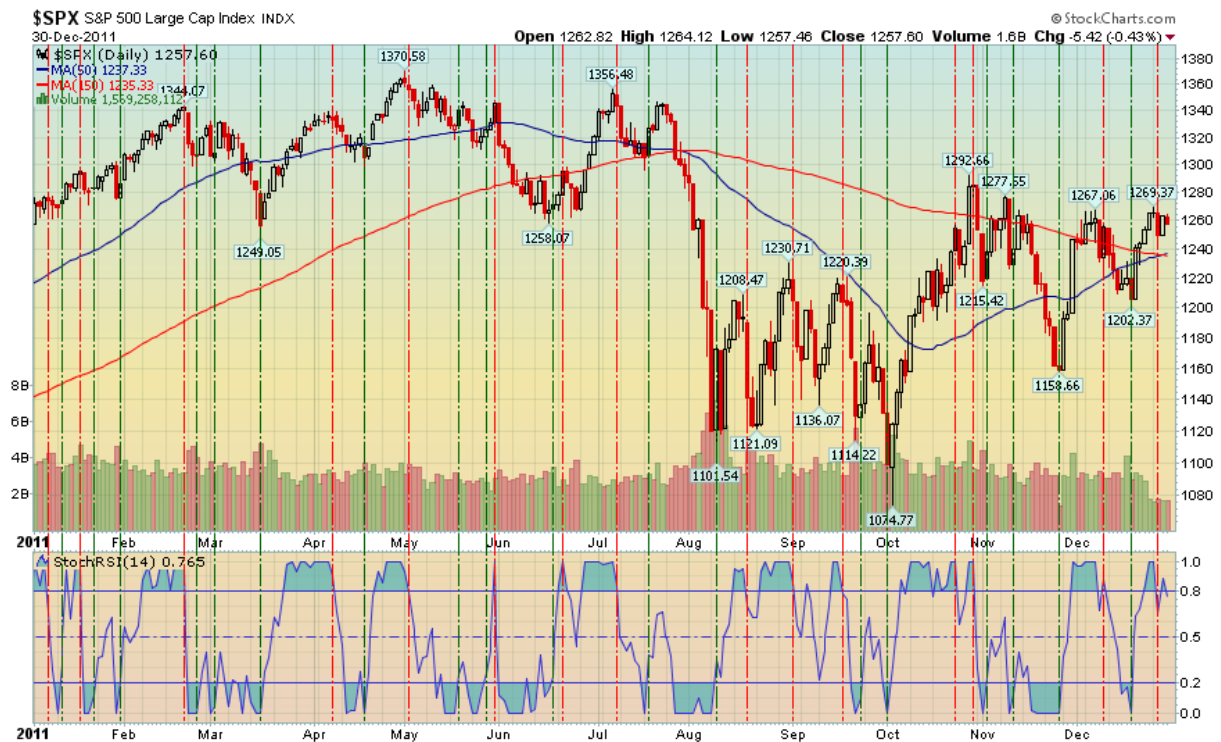
I was drawn to the Stochastic RSI indicator. The Stochastic RSI was developed by Tushard Chande and Stanley Kroll and discussed in their 1994 book, *The New Technical Trader*. It is an oscillator that measures the level of RSI relative to its high-low range over a set time period. Stochastic RSI applies the Stochastics formula to RSI values, instead of price values, making it an indicator of an indicator. The result is an oscillator

that fluctuates between 0 and 1, with crossover points at 0.2 and 0.8. Chande and Kroll designed the Stochastic RSI to provide increased sensitivity to overbought or oversold readings, and to generate signals accordingly. The classic Stochastic RSI time period was predicated on a 14-day moving average. The crossover level from overbought conditions is 0.8. The crossover level from oversold conditions is 0.2. The midpoint was 0.5. When presented graphically, these overbought and oversold time periods were easily recognized, and more specifically the 0.2 and 0.8 crossovers were easily identified.

I specifically sought to identify correlations between events when the Stochastic RSI (14 day) left overbought, or >0.8 level, then continued completely to the oversold <0.2 level, and when the corresponding security reversed from a positive trend to a negative trend. I noted that when the Stochastic RSI failed to completely move from an overbought to an oversold level, and vice versa, it became a less significant event relative to price action. I regarded these moves as false signals.

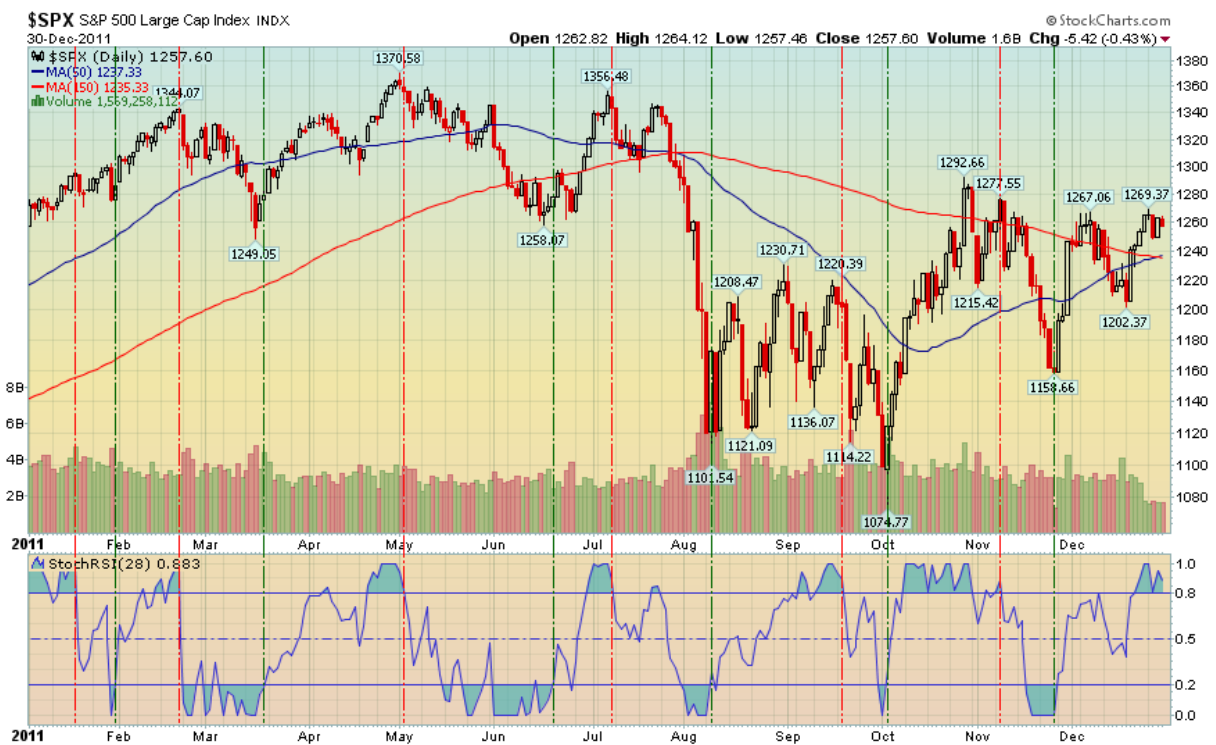
When the Stochastic RSI (14 day) left the oversold, or < 0.20 level, then continued to the overbought >0.80 level, the security would be reversing from a negative trend to a positive trend. The StochRSI has characteristics similar to most bound momentum oscillators in that a significant shift in price direction correlates to a significant change of momentum.

When I applied the Stochastic RSI (14 day) indicators to the charts it did indeed generate a significant number of signals. In fact, far too many for my work. It was not uncommon for the Stochastic RSI (14 day) to generate over 20 signals over a twelve month period with multiple reversals and an abundance of false signals. This is illustrated in the 2011 chart of the S&P 500, below. Crossovers from oversold conditions are marked with the green vertical semi-broken lines and crossovers from overbought conditions are marked with red vertical lines. The chart looked like an overwrapped Christmas package.



I experimented with longer moving average periods for the Stochastic RSI and learned that a moving average of 28 days provided me with not only a more acceptable

number of signals, but better clarity and fewer false signals. An additional filter for this indicator was added, excluding all crossovers from overbought and oversold conditions that did not travel completely from the 0.8 level to the 0.2 level and vice versa. The vertical lines that carried through the price charts had developed into fascinatingly consistent indicators of every primary trend reversal. The discovery of the Stochastic RSI (28 day) filtered in this manner was the first major development in my search, as illustrated in the 2011 S&P 500 chart below.



This discovery suited my advisory model much better. It dramatically reduced the number of signals, which in turn would aid me in managing portfolio turnover. I was still

concerned with the potential for false signals and needed a confirming indicator. In CSI terms, I had found a credible witness. Now I needed a corroborating witness.

The MACD Histogram – The corroborating witness

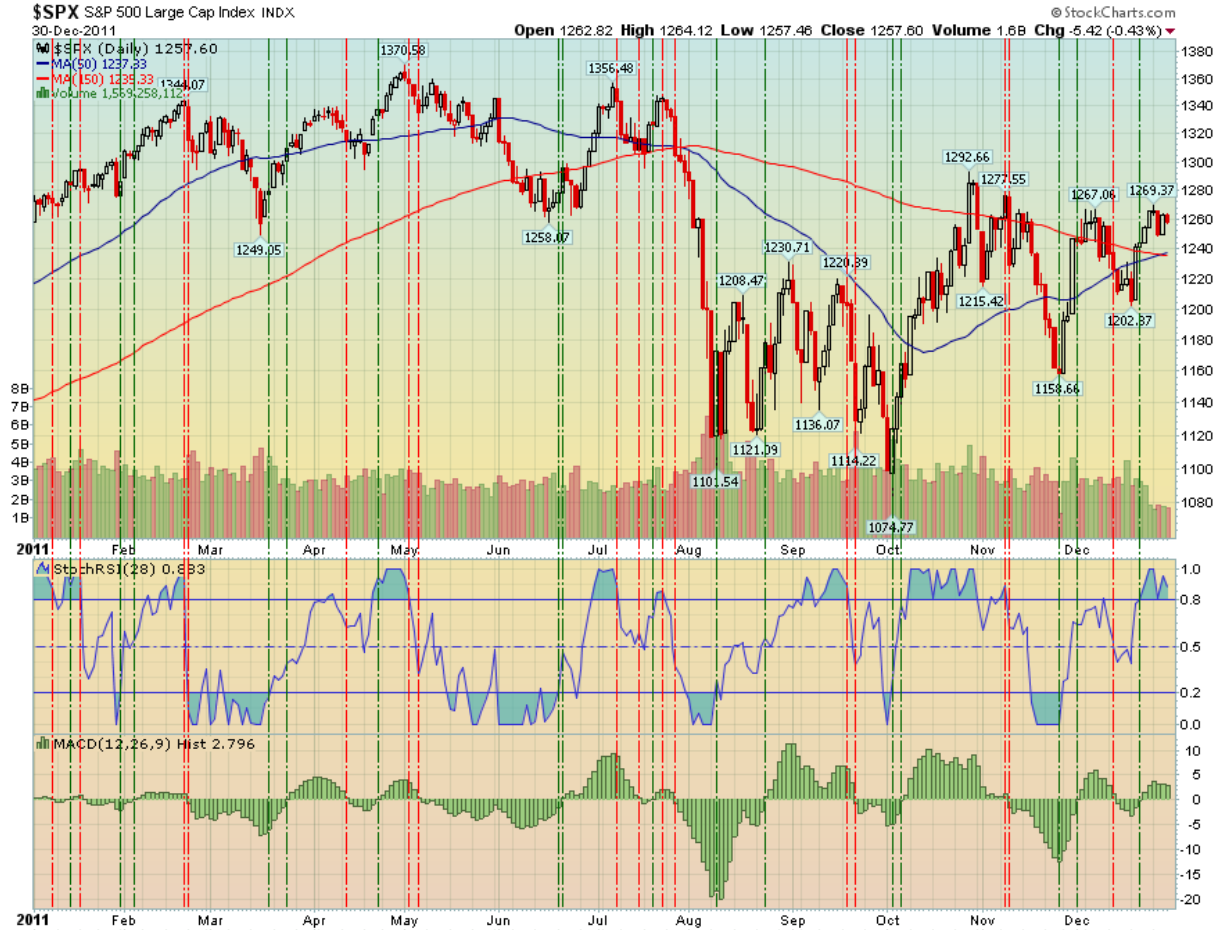
As I continued to study additional indicators and oscillators, I now included my work with the Stochastic RSI (28 day) on the charts by stacking it below the price chart. The Stochastic RSI crossovers were marked with vertical lines that carried through all of the charts. When analyzing a new indicator, I would also use vertical lines to mark significant reversal signals. It was this process that led to a very interesting correlation involving the MACD histogram. I had long recognized the usefulness of tracking price with moving averages, recognizing the impact of moving average crossovers. Moving Average Convergence Divergence, or MACD, first developed and presented by Gerald Appel over thirty years ago, is one of the simplest and most effective momentum indicators. However, MACD typically provides signals that are late relative to price action as institutional and professional investors have become more adept at extrapolating crossovers, and push trades ahead of them.

In 1986, Thomas Aspray developed the MACD Histogram. The histogram is a bound indicator that fluctuates above and below zero. Like the Stochastic RSI, the upper and lower extremes in graphs are typically colored, aiding with the visualization and

recognition of crossovers. The MACD Histogram that I referenced has the standard 12,26,9 Exponential Moving Average (EMA) parameters. It is designed to alert the chartist of an imminent crossover in MACD. The MACD Histogram is an indicator of an indicator, four steps removed from the price of the security, the fourth derivative of price, and designed to identify convergence, divergence, and crossovers.

As with my analysis of other indicators and overlays, I started my analysis by stacking the MACD Histogram chart under the price, and under the Stochastic RSI (28 day) chart and marking the MACD Histogram '0' crossovers. Green vertical lines represented positive crossovers and red vertical lines represented negative crossovers. There was correlation with all of the major market reversals, in addition to a multitude of minor reversals.

From an ease of recognition perspective, however, it was challenging. As may be seen in the 2011 S&P 500 chart that follows, there were a multitude of crossovers that generated a multitude of signals. I needed to determine if there was a means of filtering the signals down to a meaningful level. There was just too much 'chatter' from this potential witness. If I couldn't find a translator, or slow the witness down, it would become another dead end.



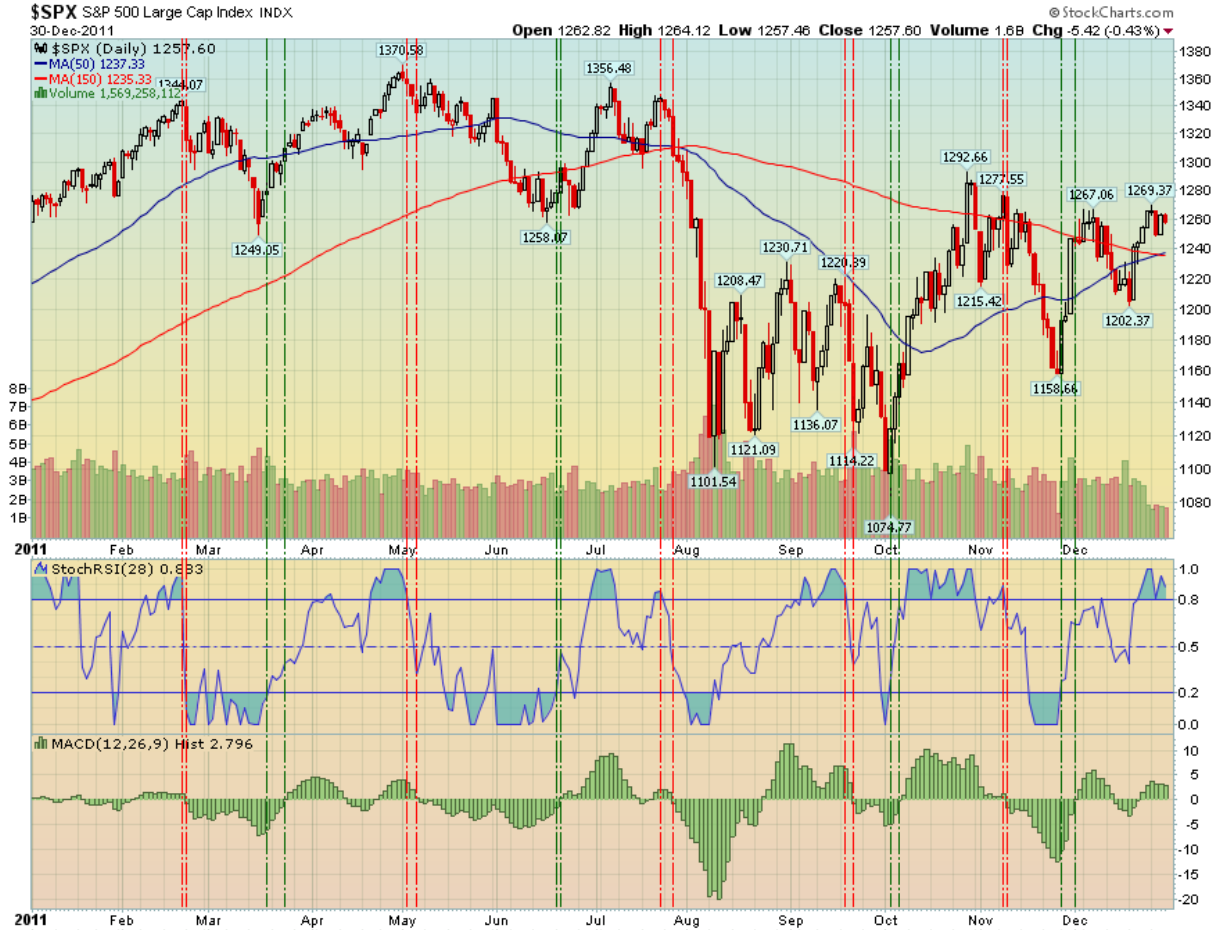
I then noticed that when the Stochastic RSI 0.2 and 0.8 crossovers occurred within 1-3 days of the MACD Histogram crossovers, it correlated with, and preceded, a major market reversal. Not just occasionally, but EVERY SINGLE TIME. There was a particularly strong correlation to trend reversals when the crossovers took place on the same day or within one day of the other. Additional separation of one or two more days between the two crossovers significantly reduced the intensity of the signal as well as the magnitude of the trend reversal. A four day separation in crossovers was relatively insignificant

with respects to a trend reversal and far more often only served as an indication of a mild correction within the context of the prevailing trend.

So not only was the MACD Histogram crossover a confirming indicator, but when paired with the Stochastic RSI (28 day) 0.2 and 0.8 crossovers, the amount of separation between the paired crossovers provided the added benefit of predicting variations in the degree of a trend reversal. It was an outstanding additional benefit. It was also much easier to recognize and identify on the price chart.

When either one of the indicators crossed over independent of the other, the price action appeared to be little affected. By filtering out all of these independent crossovers and focusing only on those that occurred within a few days of each other, the trend reversal signals became more pure.

It also became evident that there were distinctions as to which indicator crossed over first. When the MACD Histogram crossed over first, the value of the signal was dramatically degraded. Accordingly, as I continued to process and learn more about the sequences, I would filter out a crossover correlation where the MACD Histogram crossed over before the Stochastic RSI. The effects of these filtering processes are illustrated on the following chart of the 2011 S&P 500.



The correlations between these paired oscillators and the underlying security's trend reversals provided irrefutable evidence. From the CSI perspective, I now had two witnesses that were present at the scene of every 'crime.' One might ask why I didn't search for more witnesses. A good CSI needs a good prosecuting attorney to close the case. A good prosecuting attorney knows better than to parade multiple witnesses before the jury. It can be confusing, and presents more targets for the defense attorney to discredit. You only need two impeccable witnesses. I had my two impeccable witnesses with the Stochastic RSI (28 day) and the MACD Histogram.

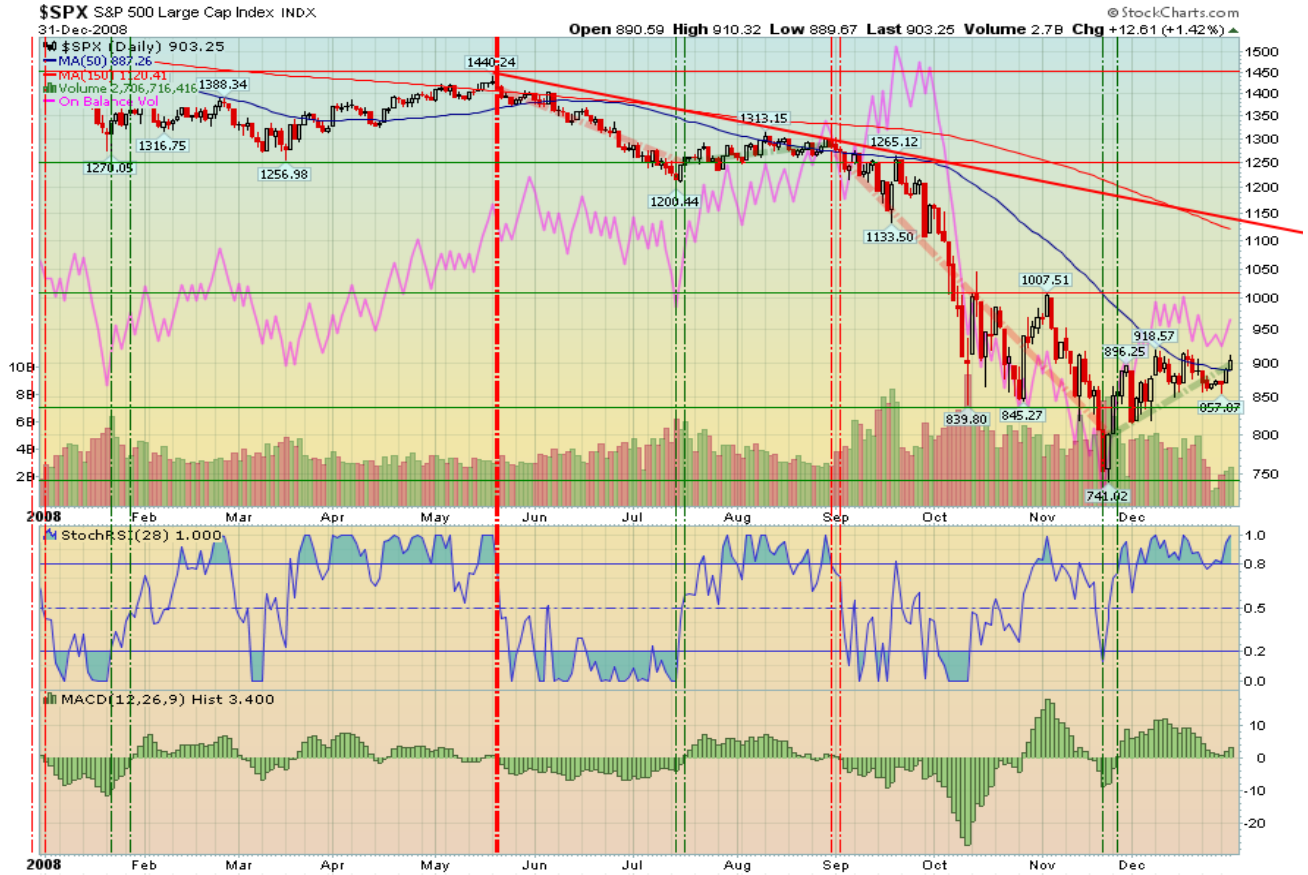
It should be noted that these crossover correlations can be identified and charted without first referencing trend reversals on the price chart. In order to determine that this was not just a curve-fitting exercise, I analyzed numerous securities charts that were stacked with the Stochastic RSI (28 day) chart on top, then the MACD Histogram chart below, and finally the price chart on the bottom. On my computer screen I couldn't view the price chart without scrolling down the page. I would first mark the Stochastic RSI crossovers, then mark the MACD Histogram crossovers that followed by 1-2 days of the Stochastic RSI crossovers. Then I would scroll down to view the price chart. I never observed a trend reversal that was not accompanied by the vertically paired lines.

More importantly, especially from an actionable perspective, the signals were not triggered on the last hour of the last day before a price capitulation or a rocket launch upward. In a significant majority of the cases, once the signal was received, an investor would have several days and sometimes even a couple of weeks to react without significantly handicapping the performance. It was also significant that while my original search was inspired by the desire to better manage drawdowns, these signals were equally adept at identifying significant trend reversals from downtrends to uptrends. They gave both buy and sell signals.

Expanding the Analysis

It was now time to analyze these indicators over various years, as my initial work focused on 2011 and carried into 2012. I was particularly interested in seeing how these indicators behaved during the 2007-2008 Bear Market. Then I would continue into our current Bull Market and evaluate what signals, if any, occurred during the high frequency trading events of 2010 and 2011, and continue real-time analysis during 2012. That would provide me with six years of data during the most challenging period of my thirty-three years in the business.

I went straight to the 2008 S&P 500 chart, the scene of the most heinous crime, when the S&P 500 fell from 1440 to 741 in six months. And there were both of my witnesses, the Stochastic RSI (28 day) and the MACD Histogram, crossing over on exactly the same day, which generates the strongest signal of all, shortly after the S&P 500 marked its highs for the year at 1440. Two months later they had a positive crossover, generating a buy signal before generating another sell signal the first of September with the S&P 500 at 1265. The final crossover of 2008 was a buy signal generated at 850. This was compelling evidence. The 2008 S&P 500 chart follows.



For the back test, I selected three equity index securities. The S&P 500 Index was represented by \$SPX. The MSCI EAFE Index as represented by the iShares ETF, EFA. And the Russell 2000 Index was represented by the iShares ETF, IWM. I also chose to analyze three bond index securities. The Barclays Aggregate Bond Index was represented by the iShares ETF, AGG. The Long-Term Treasury Index was represented by the iShares ETF, TLT. And the iShares ETF, HYG, represented the High Yield Bond Index.

The primary goal was to determine if these paired oscillator signals consistently coincided with trend reversals, particularly reversals from uptrends to downtrends over a market period that was scarred with some of the sharpest market drops on record. The secondary objectives included how many signals were generated per year, the duration of these signals, and the percentage price changes between signals.

Each year was analyzed independently. A paired crossover from an oversold condition was regarded as a buy signal. A paired crossover from an overbought condition was regarded as a sell signal. The results of this testing for the S&P 500 are summarized in Table 1.

Table 1.

Oscillator Buy/Sell Signal Matrix - S&P 500 Index							
S&P 500	2012	2011	2010	2009	2008	2007	Averages
Sell Signals	2	4	4	3	3	4	3.33
Buy Signals	2	4	4	3	3	4	3.33
Total Signals	4	8	8	6	6	8	6.67
Total Sell Returns (%)	-11.17%	-17.63%	-19.70%	-12.67%	-49.45%	-15.06%	-20.94%
Total Buy Returns (%)	10.78%	24.14%	37.87%	46.15%	6.42%	15.82%	23.53%
Average Sell Return (%)	-5.59%	-4.41%	-4.92%	-4.22%	-16.48%	-3.76%	-6.56%
Average Buy Return (%)	5.39%	6.04%	9.47%	15.38%	2.14%	3.96%	7.06%
Total Sell Duration (weeks)	19	23	22	25	22	17	21.3
Total Buy Duration (weeks)	33	29	30	27	30	35	30.67
Ave. Sell Duration (weeks)	9.50	5.75	5.50	8.33	7.33	4.25	6.78
Ave. Buy Duration (weeks)	16.50	7.25	7.50	9.00	10.00	8.75	9.83

Buy and sell signal returns were measured using the closing price of the security on the day prior to the MACD Histogram '0' crossover following the paired Stochastic RSI 0.2/0.8 crossover. Signal durations were rounded to the nearest total week.

With the S&P 500 Index, the total number of buy and sell signals from 2006-2012 ranged from four to eight per year, with an average of 6.67 signals a year. The average duration of the sell signals ranged from 4.25 to 9.50 weeks with an average of 6.78 weeks. The duration of the buy signals ranged from 7.25 to 16.50 weeks with an average of 9.83 weeks. This data is of particular interest because of the actionable time frames. Signal generators that reverse within days are problematic for most money managers, and exhausting for most individual investors. My work indicated that it would be prudent to proceed with caution when one is ten weeks downrange from a buy signal. Conversely, a buying opportunity may be just around the corner six weeks downrange from a sell signal.

It was interesting to see the closeness of the percentage returns with sell and buy signals, with a -6.56% average sell return and a +7.06% average buy return. If you remove the 2008 data, a Bear Market blow-off year, and the 2009 data, a Bull Market kick-off year, the average sell return goes to -4.58% and the average buy return to

+5.40%. The specific signal returns for the S&P 500 over this six-year period ranged from +1.16% (signal 2 in 2008) to +25.92% (signal 1 in 2009) on nineteen buy signals. The twenty sell signals ranged from -0.40% (signal 2 in 2007) to -32.75% (signal 3 in 2008).

Results were tabulated in similar fashion for each of the other securities. The tables for those securities, and additional data which includes specific security prices, dates, and yearly charts is available upon request. I have summarized the results for all of the securities, focusing on the average number of signals per year, the average sell returns and buy returns, and the average sell and buy duration, in the following table.

Table 2

Oscillator Buy/Sell Averages Summary 2007-2012	Average Annual Sells	Average Sell Returns	Average Sell Duration	Average Annual Buys	Average Buy Returns	Average Buy Duration
S&P 500 Index/\$SPX	3.33	-6.56%	6.78 wks	3.33	7.06%	9.83 wks
MSCI EAFE Index/EFA	3	-7.47%	8.83 wks	3.2	8.14%	8.05 wks
Russell 2000 Index/IWM	3.7	-7.30%	6.14 wks	3.5	10.30%	8.43 wks
Aggregate Bond Index/AGG	3.2	-0.54%	4.68 wks	3.2	2.37%	11.74 wks
Long-Term Treasury Index/TLT	3.5	-2.42%	7.05 wks	3.5	5.99%	7.81 wks
High Yield Bond Index/HYG	2.7	-0.95%	6.50 wks	2.8	7.36%	12.12 wks

The Applications

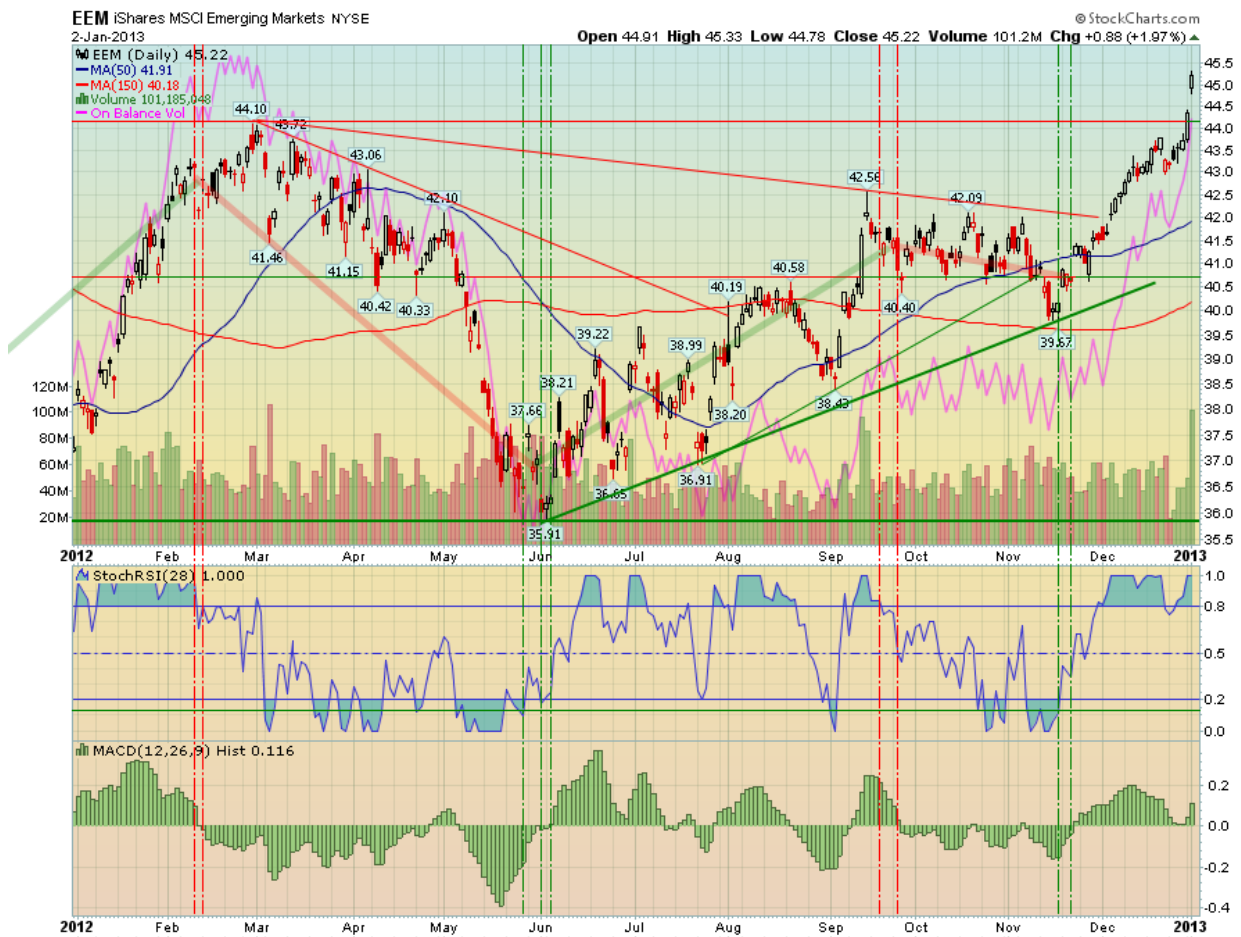
While I discovered the usefulness of the Stochastic RSI oscillator in January, I didn't discover the pairing with the MACD Histogram until late September. When applying the overlays of the paired indicators on positions that I had taken earlier in the year, there were several awkward moments when I realized that my buys had been established shortly after crossover sell signals had been generated. I could be buying securities that were currently in an uptrend, above support levels and trendlines, and above their moving averages that were all stacked in the correct order. Yet when the paired crossovers were applied to the charts months later, I would see that some of those buy trades were fresh on the heels of a sell signal. Whenever this occurred, the results bore out in favor of the trend reversal sell signal, without exception.

With many technical indicators there is a strong tendency to front-run a signal before it actually triggers. A good example is the old standard, the moving average crossovers. As more and more market technicians accepted and recognized the gross momentum shifts associated with 'golden crosses' and 'death crosses', it was relatively easy to calculate the extrapolate prices and act on that data prior to the actual crossover. With the paired oscillator crossovers I learned that it was less than effective to try to anticipate a signal. I observed multiple occurrences when the Stochastic RSI

indicator would appear to be diving across a 0.2 or 0.8 level only to turn back at the last instant. There was no benefit in anticipating a crossover. Additionally, I learned that it is always prudent to implement the '24 hour rule' when it appeared that a crossover was occurring. One of the very attractive features of this indicator is that it does not have a hair trigger, flashing a signal and if you don't act immediately it is too late. This trend reversal tool is patient, and providing ample time to trade after a signal is generated.

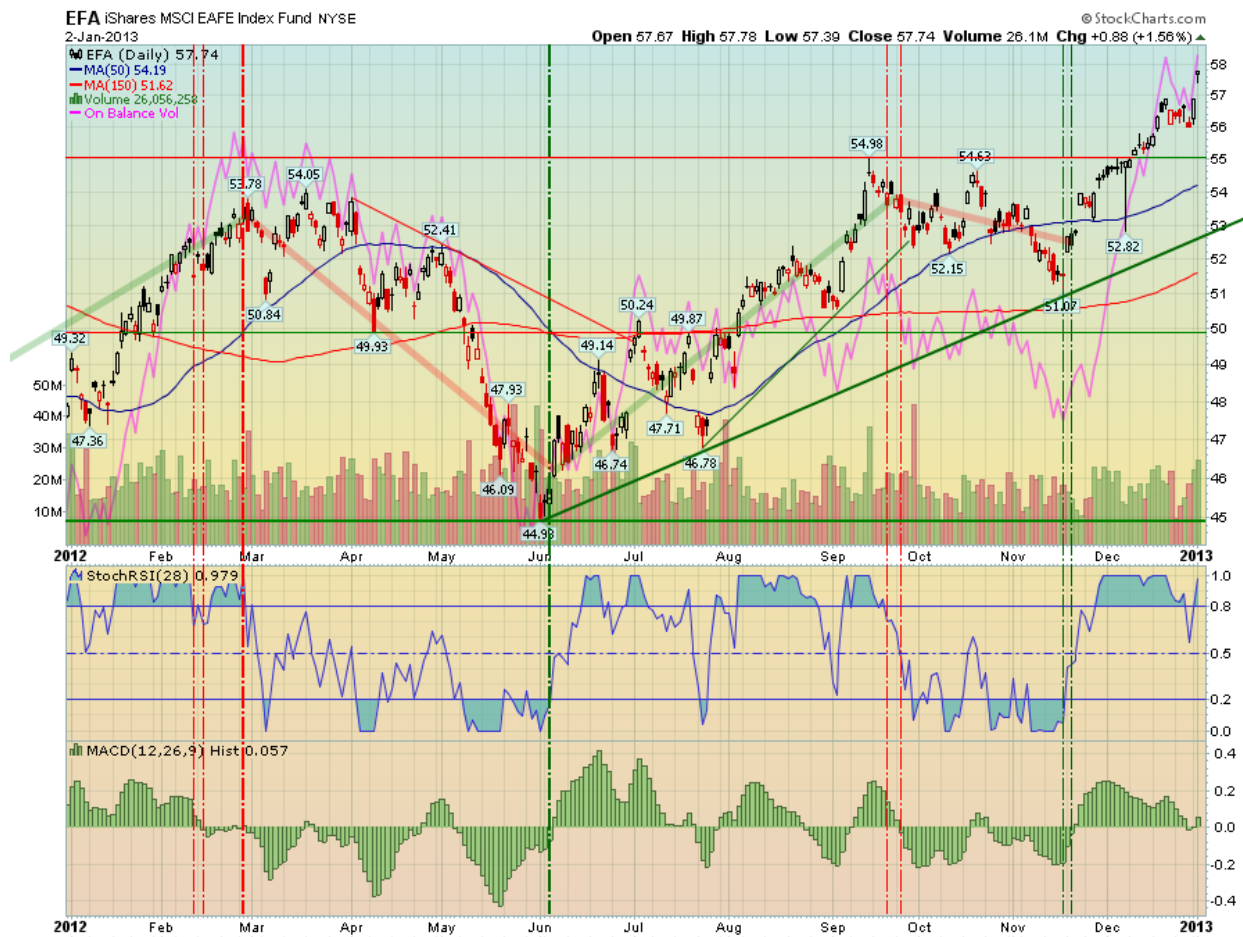
The crossover signals/reversal indicators were always the most clear after extended overbought or oversold periods. The reversal indicator did not care whether the security was being supported by an uptrend and moving averages. The reversal indicator signal always preceded a break in the dominant trendline, whether it was an uptrend or a downtrend. This data was probably the most difficult for me to accept, for as a classic trend follower, I had been taught to always stick with the trend until it was broken. But in example after example, I learned that the trend reversal indicator was a primary instrument, not a secondary one. The information it presented did not contradict my traditional training, but rather allowed me to anticipate and respond in a more timely manner. By alerting me of a reversal in the primary, trend the indicator gave me more time to evaluate a potential transaction. The more I studied the trend reversal indicators and applied them to various securities, the more my confidence grew in their ability to be an effective and actionable tool.

An uncommon but effective sequence occurs when the StochRSI breaks above the 0.2 level unaccompanied by a timely break from the MACD Histogram, then pulls back to touch the 0.2 level, this time accompanied by a crossover in the MACD Histogram. This would present itself as a three-line positive reversal signal. An example of this three line reversal indicator can be seen the following chart of the MSCI Emerging Markets iShares Fund, EEM, in early June. Three line signals proved to be quite powerful as can be seen by the subsequent 15%+ move of EEM to the upside.

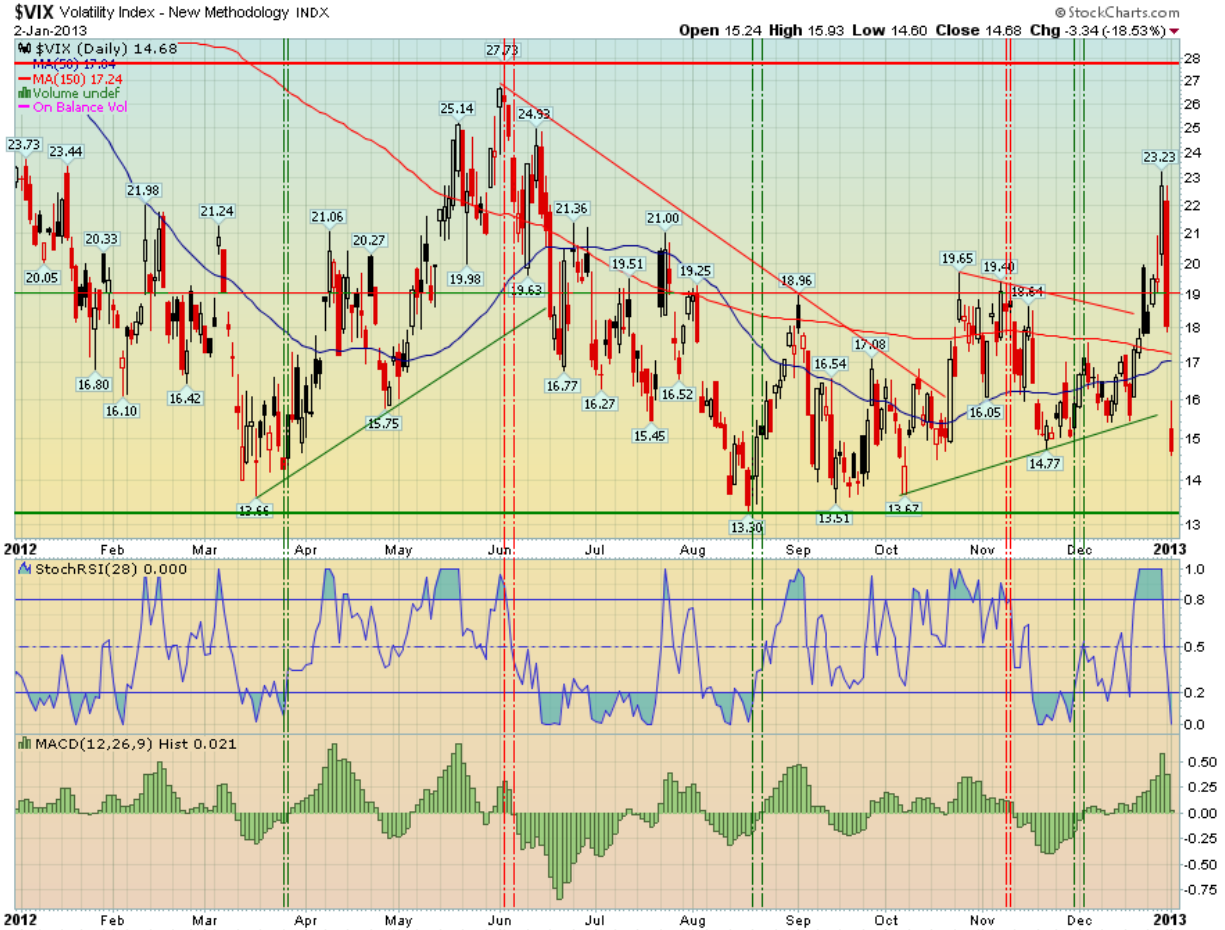


While it proved unfruitful to anticipate a signal generation, the chart action of the MACD Histogram could give a preview of coming attractions as to the energy and strength of the crossover signal. This can be seen on the preceding EEM chart, and in the EAFE chart below. Notice the May MACD Histogram charts for both securities as it builds back from a very oversold excursion to the 0.4 level. It is important to note that while the actions of the MACD Histogram and the Stochastic are often individually regarded by chartists as momentum indicators, the power of their pairings is significantly more important.

These are also good examples of how the reversal signals were generated in a much more timely fashion than a classic downtrend break, which did not occur for another month. Classically, one would wait for a break of the primary down trendline when charting a security in a cyclical decline before considering establishing a position in the security. More conservative chartists may wait until there had also been a successful resistance level breakout followed by a positive test of that breakout level. The cost of these 'extra cautions' would often equate to several percentage points. In the EFA chart, the cost of waiting for a downtrend break, retest, and resistance level breakout would have pushed the buy into August, foregoing the multiple opportunities to buy in June at significantly better prices.



Paired crossover signals also were effective when evaluating other non-securitized charts, such as the Volatility Index, a.k.a. the VIX. While I do not trade the VIX instruments, I monitor the index with an eye towards risk management. In the \$VIX chart that follows, a strong sell trend reversal indicator is generated at the May/June peaks, which correlated well with the buy signals being broadly generated for almost all equity indices. This would be regarded as a confirming indicator for a buy-side investor.



\$VIX became range-bound in August, with a weak sell signal that correlated with the November rally, and a weak buy signal that correlated with the end-of-December weakness. The year-end spike in the \$VIX was signaled weeks in advance with the buy signal in early December. While not confirmed on this 2012 chart, there was a confirmed sell signal the first trading day of 2013, which quieted \$VIX down the first couple of months of 2013.

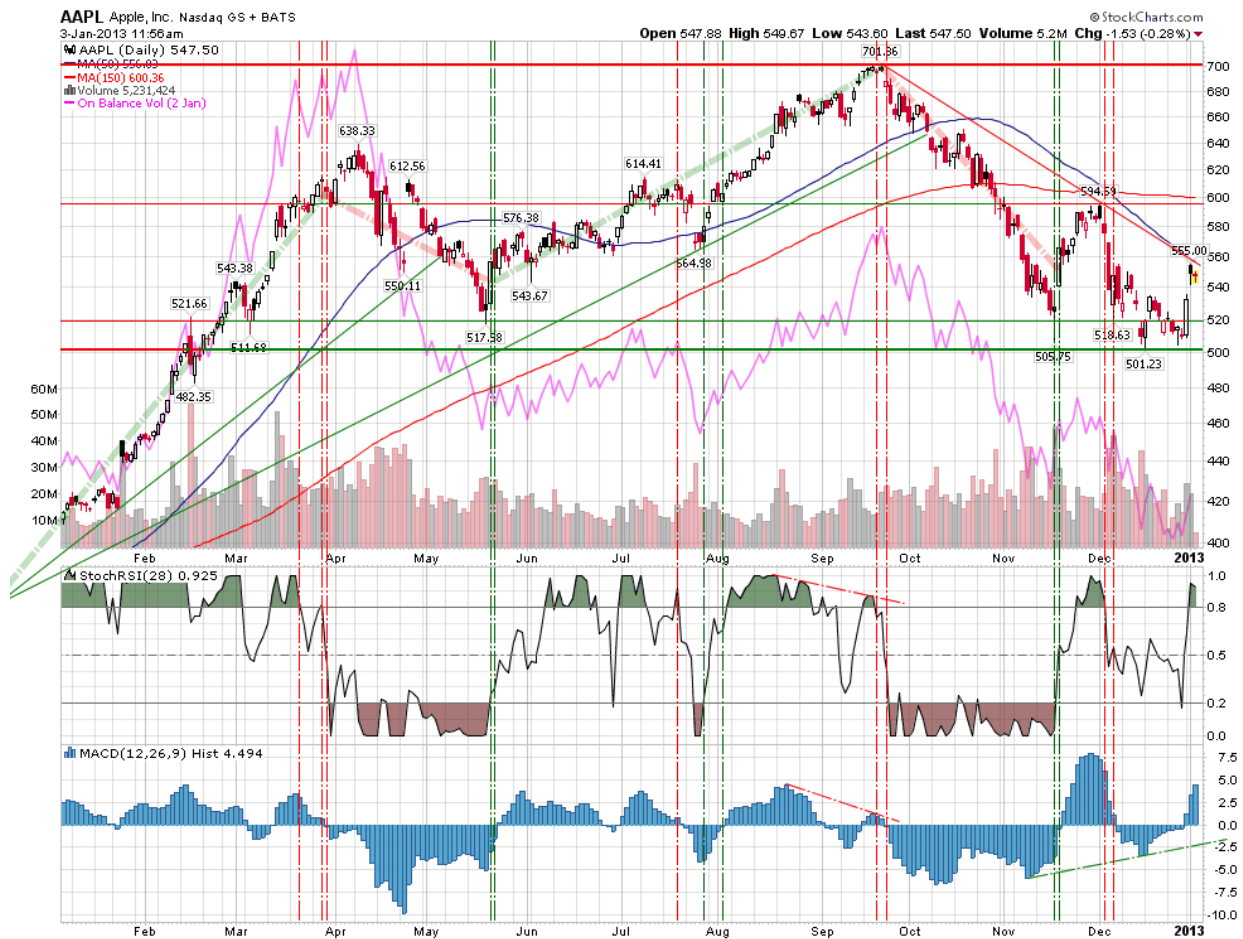
The more action in the underlying security, the better the signals, which makes gold an excellent candidate for our discussion. In the following GLD chart you can see

the very strong sell signals in late February and late September. The weak buy signal in May was followed by a strong buy in late June. I have also drawn in trendlines on the MACD Histogram and Stochastic RSI charts for those months.

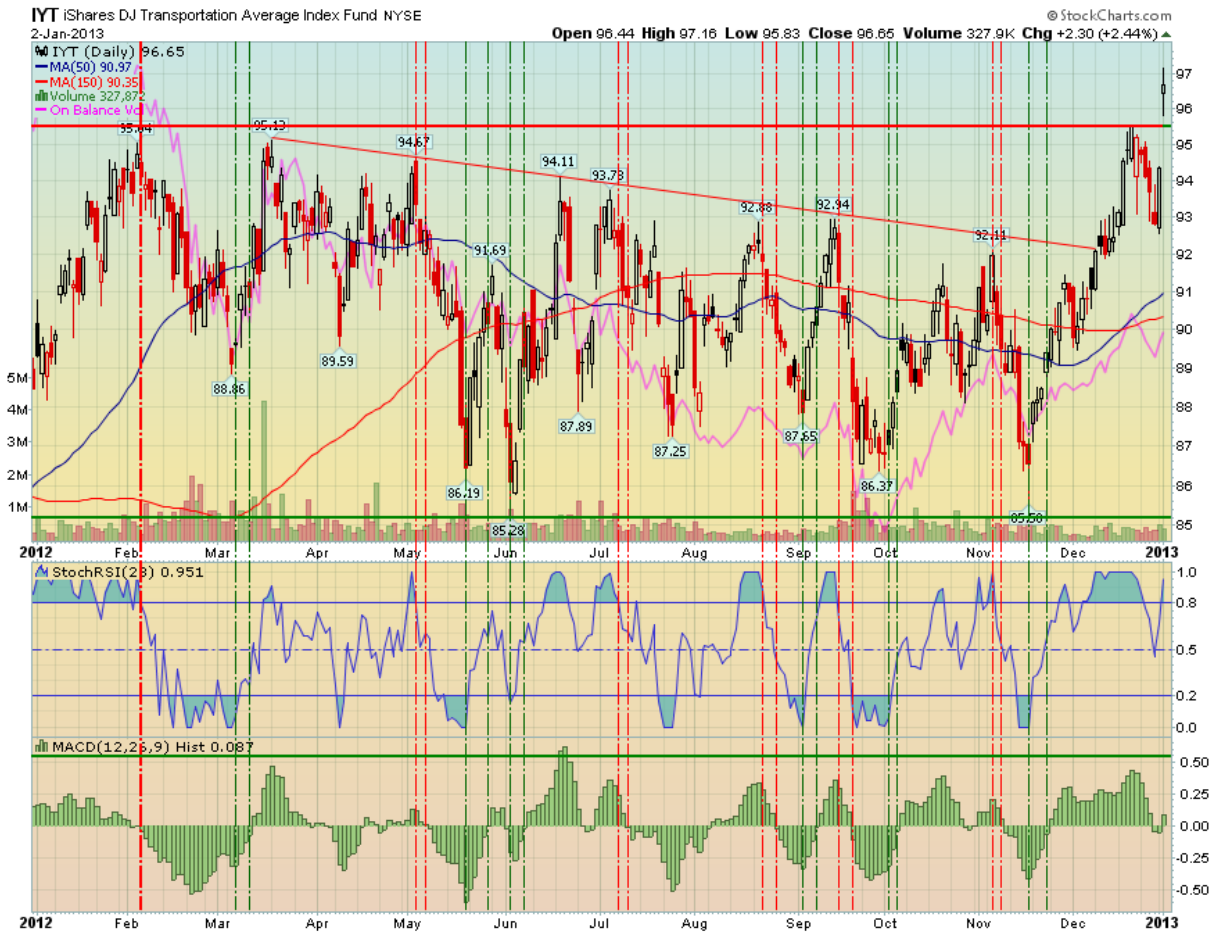


In GLD's case, the first November buy signaled a positive correction within the context of a longer-term decline. When weak signals occur within four weeks of each other they tend to cancel each other out and defer back to a previous, stronger signal. This was observed with both buy and sell signals.

In 2012, AAPL opened the year trending strongly upward after a late 2011 buy signal. The sell signal in late March was a triple, set up by the StochRSI crossover that didn't have MACD confirmation, then reversed back to the 0.8 level before declining, this time confirmed by the MACD Histogram crossover. The May buy signal was very clear and strong, as was the sell signal at \$700. The buy signal generated in November was followed by a weaker sell just two weeks later, effectively cancelling each other out, and deferring back to the September sell signal.



When does the Reversal Indicator not work well? When the security is not trending, but rather is reciprocating within a trading range. A good example would be the Dow Jones Transportation Average in 2012, which we analyze using the iShares ETF, IYT. In the 2012 chart below, there is a clear sell signal in February. There are signals, all right. I count no less than twelve in the course of twelve months. The February signal is the only extremely clear one. There is a double signal generated in May/early June. There is a sell signal in August that reinforces the July sell signal. But the effective range is between 87 and 92, a mere $\pm 2.7\%$ from midpoint.



With the exception of high yield bonds and long term treasuries, there appears to be limited application for most bond securities. Signals will be generated, but rarely from very overbought or very oversold conditions. More frequently they will be signaling corrections within the context of a long-term trend, assuming the bond security is trending at all.

In Conclusion

My initial goal in this quest was to search for some measures to assist me in managing the dramatic portfolio drawdowns that have been plaguing investors for the past several years. I needed a defensive tool that was reliable, consistent, and fixable in the field, if necessary. Last, but not least, it had to fit into my existing toolbox. This trend reversal indicator has become a top-shelf, primary tool.

Most certainly, I have not covered all of the implications and applications. As with any investment process, it would require tailoring to suit the particular user of the information, not to mention the characteristics of the underlying security. In my ongoing work with this trend reversal indicator, I have already applied an additional filter that is designed to confirm buy and sell signals and reduce false signals. It also assists the user in being more patient with the signal as you await the final confirmation.

While this is a new indicator to me, it is built from trusted old parts. I didn't have to apply new mathematics, express new derivatives, or write new code. I did have to be patient and persistent, pay attention to details, and recognize the clues as they appeared. The fact that this trend reversal indicator has a strong visual aspect aids in its identification and is a tremendous bonus. Equally gratifying was the fact that this defensive tool turned out to be a pretty good offensive tool.

The role of the trend reversal indicator in my practice has transformed into an effective Green Light/Go, Red Light/Stop crosswalk signal. When we are operating under a Green Light, it is safe to cross the street, and establish or add to existing positions, all the time being mindful of how many weeks the Green Light has been in effect. When we are operating under a Red Light, we don't establish or add to existing positions. Rather, we look for an exit level that makes sense, at the best price we can secure. We have the confidence to remain patient, because the research has shown that excellent exit levels can be several days downrange after a signal is generated.

From the CSI perspective, the Drawdown Case is closed. I believe that with the proper use of this trend reversal indicator, an investor can better identify and pursue opportunities without being paralyzed by the potential risks.

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