Inside the Surprise Index

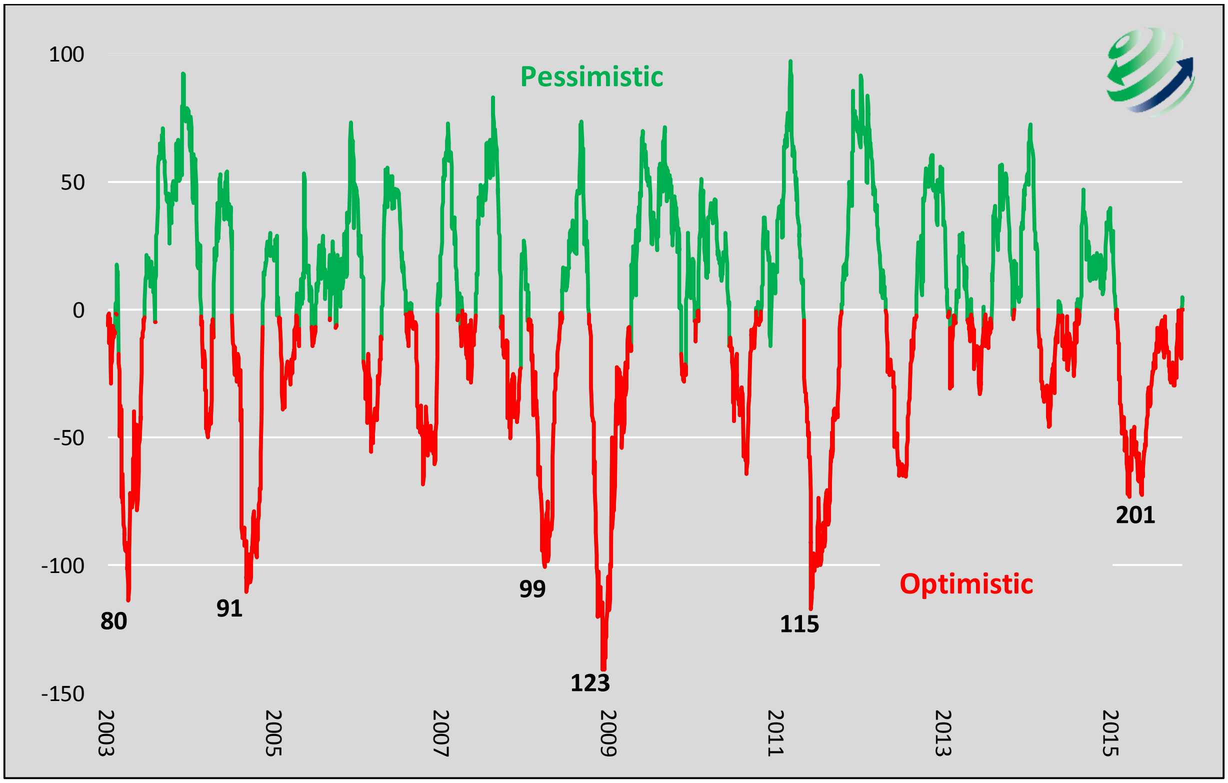
Citigroup's - Citi Surprise Index (CSI) is a real-time model, designed to analyze the accuracy of Wall Street's economic forecasts. A positive index value indicates that recent economic data is stronger than the consensus of economists' expectations. A negative reading denotes economic data which is worse than expectations. Unbeknownst to most investors, the CSI also serves as a gauge of sentiment and provides unique insight into how well economists understand the current economic cycle.

Appreciation for the multitude of messages provided by the CSI allows investors to stay a step ahead of the economic models that Wall Street, and by default most investors, rely heavily on to forecast market levels and securities prices. This is more important than ever now as markets appear more concerned with economic data's deviation from forecasts and less concerned with the absolute reading of the very same data and what it signifies for economic growth. At 720 Global, our objective is to help investment professionals outperform and differentiate themselves in many ways. We believe offering unique and substantive analysis, such as this unique way to interpret the CSI, affords insights that go well beyond the obvious and superficial.

The Citi Surprise Index

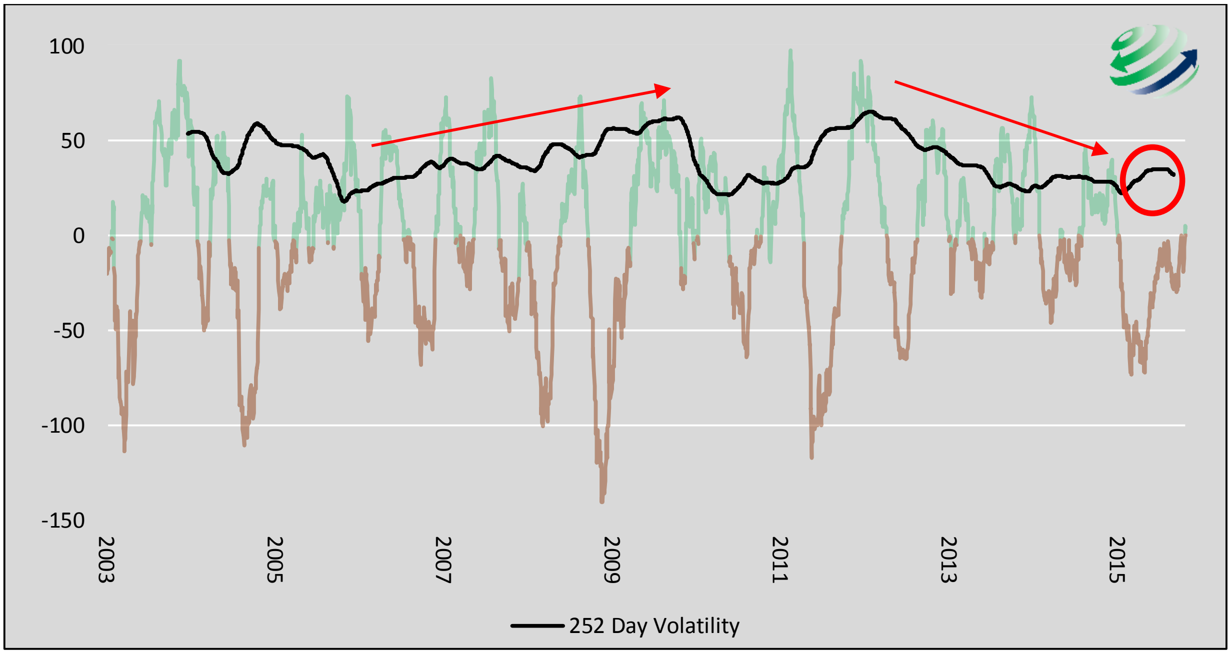
The graph below plots the CSI since 2003. Positive readings are in green and negative readings in red. Bear in mind that a positive reading means economists have underestimated economic data, thus the label "Pessimistic" in green at the top. Conversely, negative readings indicate economists have overestimated economic data, thus the label "Optimistic" at the bottom. The figures below selected points are the number of days the index was consecutively negative (more on that later). The simple takeaway from the chart is that economists constantly shift between periods in which they are overly optimistic and overly pessimistic. This gyration is to be expected as economists notice errors in their forecasts and adjust their models to reflect the current environment. Interestingly, the adjustments to their models do not result in better forecasts as evidenced by the continual see-saw pattern of the index. The second graph further highlights this point by plotting the 1 year volatility (standard deviation) of the index. This graph illustrates the extent to which economists' consensus forecasts deviate from the actual outcome without regard for direction. Since 2003, there are gradual ebbs and flows in the volatility of the index but not a clear sustainable downward trend, which would signal an improvement in forecasting skills.

Citi Surprise Index since 2003



Data Courtesy; Bloomberg, Citigroup, 720 Global

Citi Surprise Index with 252 day Volatility Overlay



Data Courtesy; Bloomberg, Citigroup 720 Global

720 Global considers 3 factors to make the most of understanding this data set.

The first factor is the duration of forecasting errors, or the amount of time the index is consecutively positive or negative. Said another way, it is the length of time that economists consistently over-estimate or under-estimate economic data. Longer periods of consistent over or under estimation are a warning that economists are slow to recognize the economy is accelerating or decelerating at a different pace than that of the prior months.

The second factor is the magnitude of errors, or how far the index is from zero. Readings significantly below or above zero indicate that consensus forecasts are missing by a wide margin. This alerts one to the magnitude in which economic trends are not being captured. More alarmingly though it can also signify that economists are tardy in their recognition of a change in the direction of the trend.

The third factor, volatility, measures the variability of forecasting errors over time. When volatility trends upwards it is an indicator that economists have been experiencing increasing difficulty forecasting actual outcomes. Likewise a downward sloping volatility trend signifies economists are more in tune with changes in the economy. In simple words, volatility trends indicate the grasp that economists have on the state of the economy.

Observations during the Great Financial Crisis (2008/2009)

The great financial crisis of 2008/09 took markets, economists and the Federal Reserve by surprise. Very few economists forecasted the recession and even fewer predicted the punishment it would inflict on the banking sector and the markets as a whole. Deeper clarity around the CSI, as offered through the 3 aforementioned factors, would have alerted investors to the increasing difficulty economists were having in forecasting the state of the economy and hopefully made them less reliant on such forecasts.

One year volatility of CSI, a measure of longer term volatility over a 252 business day period, started rising in the first months of 2006, more than 2 years before the crisis took hold. In both January and October of 2007, 50-day volatility, a measure of shorter term volatility experienced substantial shocks of over 2 standard deviations. So, while the pre-crisis years of 2006/2007 lacked a significant duration or magnitude change in the index which typically accompanies economic change, the increasing trend in long term volatility and bursts of short term volatility should have raised awareness to the increasing risks building in the economy and the growing inaccuracy of Wall Street forecasts. In 2008, as crisis and recession set in, there was a 99 day and a 123 day period of negative consecutive readings, the longer of which was of record magnitude.

Current Observations

Currently, as detailed in the first graph above, the index just ended its longest period (201 days) of consecutively negative readings, again think of this as "overly optimistic forecasting of economic data". However, as compared to 2008/2009, the magnitude of the over-optimism is relatively small. While certainly not dire, this trend of excessive optimism is worth keeping an eye on. After peaking in early 2012, longer term CSI volatility steadily decreased until the beginning of 2015 at which point it reversed. In March of 2015 the short term volatility gauge spiked over 1 standard deviation higher, but remained well below the levels witnessed prior to 2008. **The takeaway is that economists have been consistently over-estimating the strength of the economy this year. The magnitude of their misses is not particularly worrisome but volatility measures and the recent record number of consecutive negative readings are suggesting that economists' models are losing their grasp on the state of the economy.**

Summary

The CSI is one of many tools offering deeper insight to investors attempting to gauge the market environment. Most observe the CSI superficially through a one-dimensional lens and fail to consider the broad implications it offers. Considering the three factors described above affords

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investors a better assessment of embedded information most do not consider. To summarize, the CSI allows one to evaluate:

1. The length of time that actual economic data has data been better or worse than expectations, and thus the optimistic or pessimistic leanings of economic forecasters
2. The amount forecasts deviate from actual results
3. The consistency, or lack thereof, of forecast errors

Paying attention to the signals the CSI sends in various forms may allow one to see changes not readily apparent to the superficial observer.
