CPM INVESTING

ETF "RSP" | S&P 500® Equal Weighted Index
Three-week Horizon
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This three-week forecast of investor sentiment as an example of our perspective on stock market corrections and recoveries. A six-week forecast is available at **contact@cpminvesting.com**

Summary (data as of Dec 06 2024): Recent market dynamics have been generally consistent with our forecasts. Over the coming weeks, our Market Resilience Indexes (MRI, Figure 1) and the Excess RSI (EMA) analysis (Figure 3) both indicate a resilient stock market. The physics-based sentiment drivers (Figure 1) indicate generally offsetting shifts in the Long- and Short-term Drivers indicated for the week of Dec 13, with the result being moderately strong naturally occurring optimism. The stock market is not likely to experience a dramatic decline over the coming weeks.

Recent Market Dynamics - We expected the stock market to be resilient over the last several weeks because of the strong optimistic readings of the Long-Term Driver (Figure 1), and this has been the case. We expected short-term price volatility because of changes in the Short-Term and Minor Flash drivers (Figure 1). This has also been the case.

Outlook - The Long-Term Driver (lower panel Figure 1) indicates "moderate optimism" over the next several weeks. This is a shift from the period of "strong optimism" that began in early Aug 2024. The period of strong optimism coincided with the stock ascent of the stock market, as expected. While the upcoming period of moderate optimism may result in a less dramatic ascent, the positive trend of the stock market is likely to continue over the next few weeks. Beginning this coming week, the Short-Term Driver will shift to a more optimistic stance, which may counteract the less optimistic stance of the Long-term Driver.

The Excess RSI (EMA) analysis (Figure 3) indicates a high level of optimism and price momentum related to economic and market factors. If this condition continues, stock market sentiment will be even less affected (negatively) by the less optimistic stance associated with the Long-Term Driver.

The MRI (upper panel Figure 1) suggest a resilient stock market over the next few weeks. This is discussed on the following page.
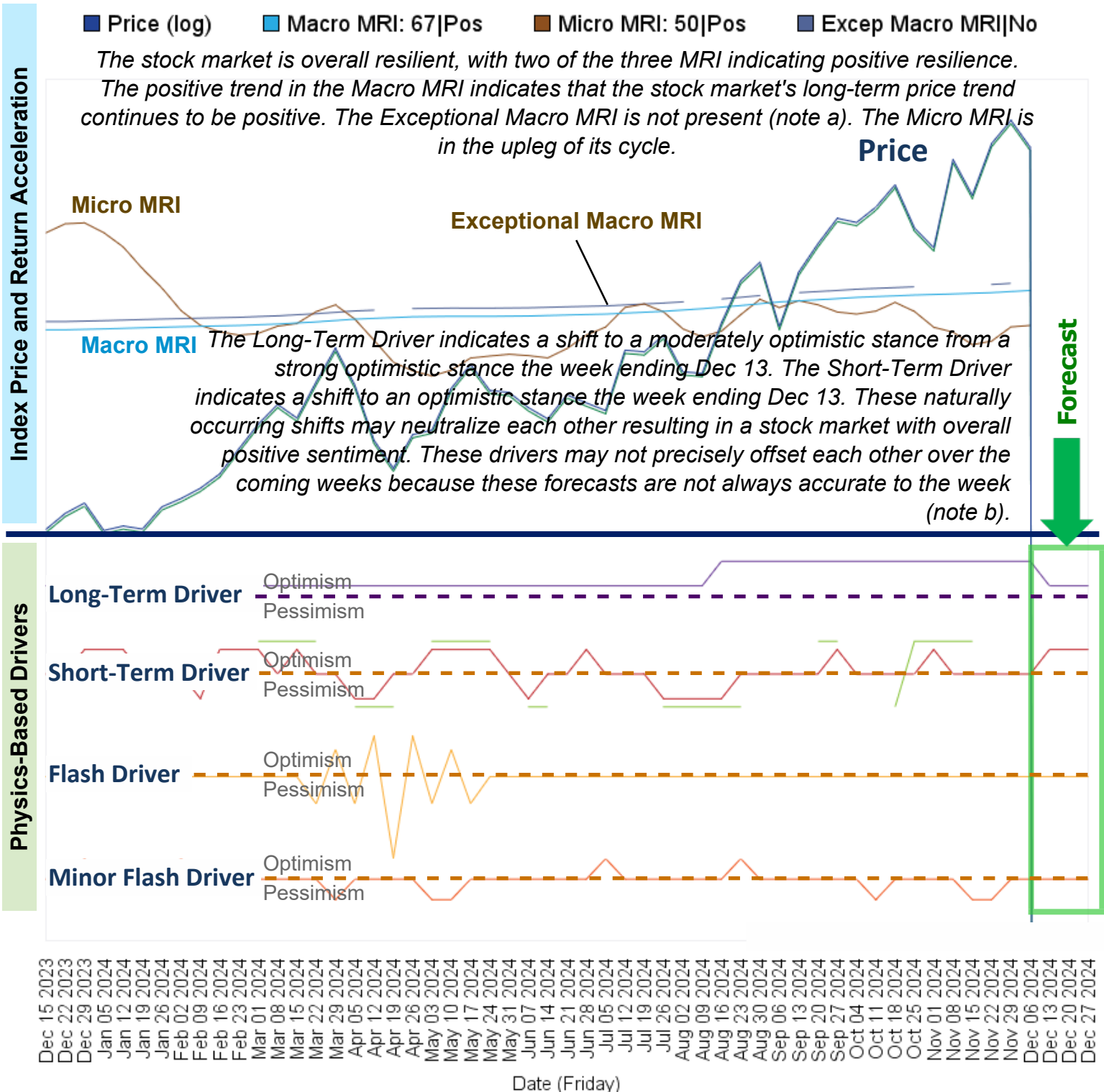
Figure on the Following Page: Notes linked here: https://cpminvesting.com/notes and the Additional Notes of this report are useful background for this report. Figure 1 on the following page contains two panels. The upper panel displays the asset price and our Market Resilience Index® series. The MRI are derived solely from the asset price and measure its return acceleration over different time frames, from a few weeks (Micro MRI) to several quarters (Macro MRI). These MRI are shown with their current levels (ranging from 0 to 100) and their recent slope/trend (Pos=Positive, Neg=Negative) indicated in the legend. The Exceptional Macro MRI is shown as a line above the Macro MRI and is indicated as being present (Yes) or not (No) in the legend. See note #1 on https://cpminvesting.com/notes for background on the MRI. The lower panel on Figure 1 shows the physics-based drivers of investor sentiment, which have been calibrated to show naturally occurring shifts affecting the MRI. The predicted status of each driver is shown in the light green vertical box on the right. See #2 on https://cpminvesting.com/notes for background on the physics-based drivers and note #4 regarding these indicators converging on a negative trend.

## MRI and Sentiment Drivers   Fig. 1

Physics-Based Sentiment Forecasts
ETF "RSP" | S&P 500® Equal Weighted Index as of Dec 06 2024
MRI and Their Drivers: Dec 8 2023 - Dec 27 2024

■ Price (log)   ■ Macro MRI: 67|Pos   ■ Micro MRI: 50|Pos   ■ Excep Macro MRI|No

The stock market is overall resilient, with two of the three MRI indicating positive resilience. The positive trend in the Macro MRI indicates that the stock market's long-term price trend continues to be positive. The Exceptional Macro MRI is not present (note a). The Micro MRI is in the upleg of its cycle.

The Long-Term Driver indicates a shift to a moderately optimistic stance from a strong optimistic stance the week ending Dec 13. The Short-Term Driver indicates a shift to an optimistic stance the week ending Dec 13. These naturally occurring shifts may neutralize each other resulting in a stock market with overall positive sentiment. These drivers may not precisely offset each other over the coming weeks because these forecasts are not always accurate to the week (note b).

Index Price and Return Acceleration

Physics-Based Drivers

Long-Term Driver — Optimism / Pessimism

Short-Term Driver — Optimism / Pessimism

Flash Driver — Optimism / Pessimism

Minor Flash Driver — Optimism / Pessimism

Date (Friday)

RSI Analysis - 10-Year   Fig. 2

ETF "RSP" | S&P 500® Equal Weighted Index
14-Week RSI - Actual and Predicted: Dec 19 2014 – Dec 6 2024
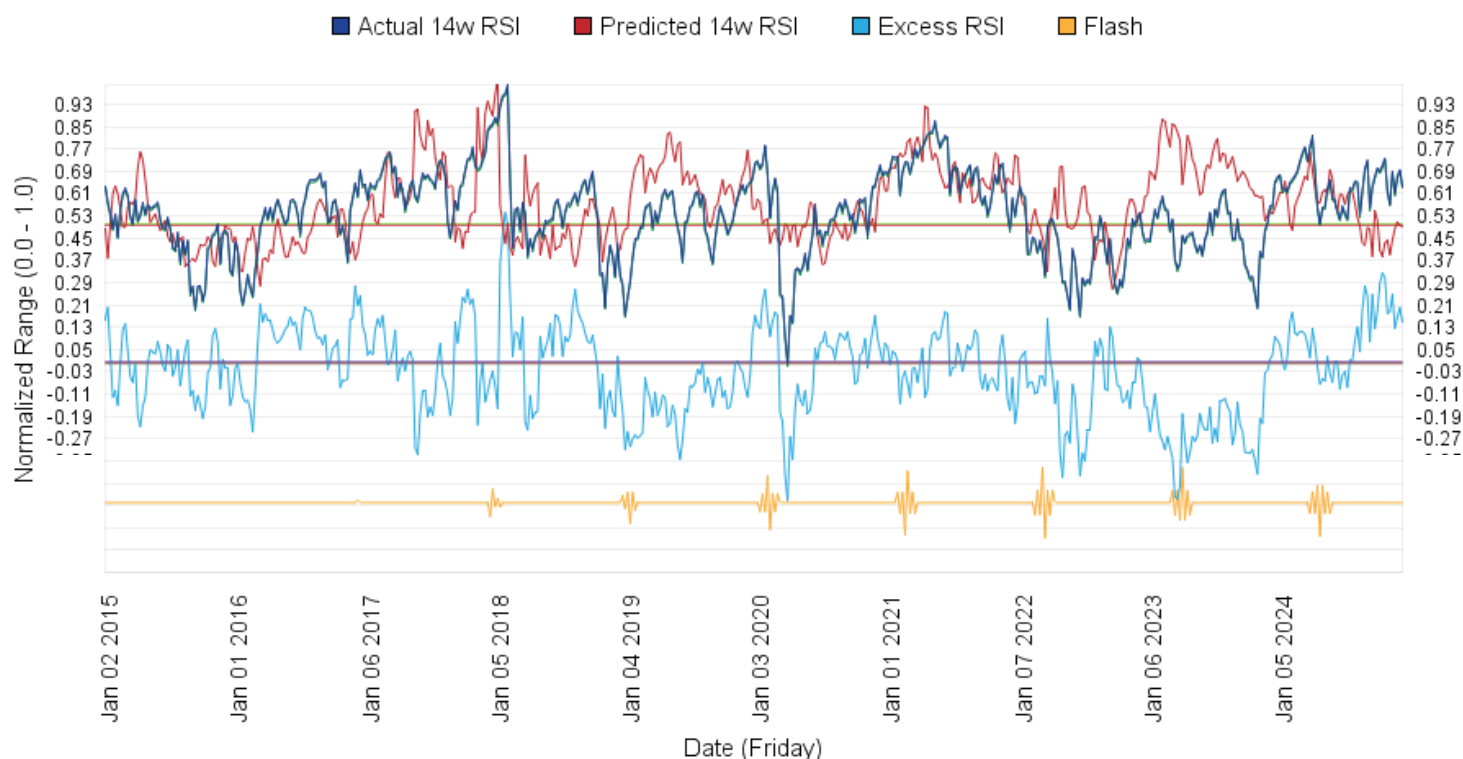
The 14-week RSI is an important component within the Short-Term Driver shown in Figure 1. RSI is a widely used measure of asset price momentum and our RSI forecasts explain most of the weekly volatility of the actual RSI. The upper portion of Figure 2 shows the predicted and actual 14-week RSI for the asset price (not shown) for the last 10 years. The light blue line in the middle of the figure ("Excess RSI") indicates the difference between these two RSI series. High values of the light blue line indicate that the market has stronger price momentum than can be expected from the natural shifts indicated by the predicted RSI, presumably due to positive economic and/or market conditions. Low values indicate that the market has weaker price momentum than expected, presumably because of negative conditions. The Flash Driver is shown for reference.

Comments (data as of Dec 06 2024): [No material change from last week] On the far right of Figure 2, the light blue line shows an extended period in which Excess RSI is positive, indicating that the index's price momentum has exceeded what can be attributed to naturally occurring shifts in sentiment. The current level of Excess RSI is among the highest observed over the last ten years, suggesting that investors hold a positive outlook on economic, market, and other real-world conditions.

Concerns about potential negative economic factors would be reflected in the Excess RSI. Factors such as recession and high valuation measures, do not appear to significantly affect price momentum for the index. While investor sentiment surrounding the US presidential election is likely reflected in the Excess RSI, we cannot determine its specific influence relative to other factors (e.g., economic or market conditions) in this analysis.

RSI Analysis - 1-year with EMA   Fig. 3

ETF "RSP" | S&P 500® Equal Weighted Index
Index Price, Predicted 14-Week RSI: Dec 8 2023 – Dec 27 2024
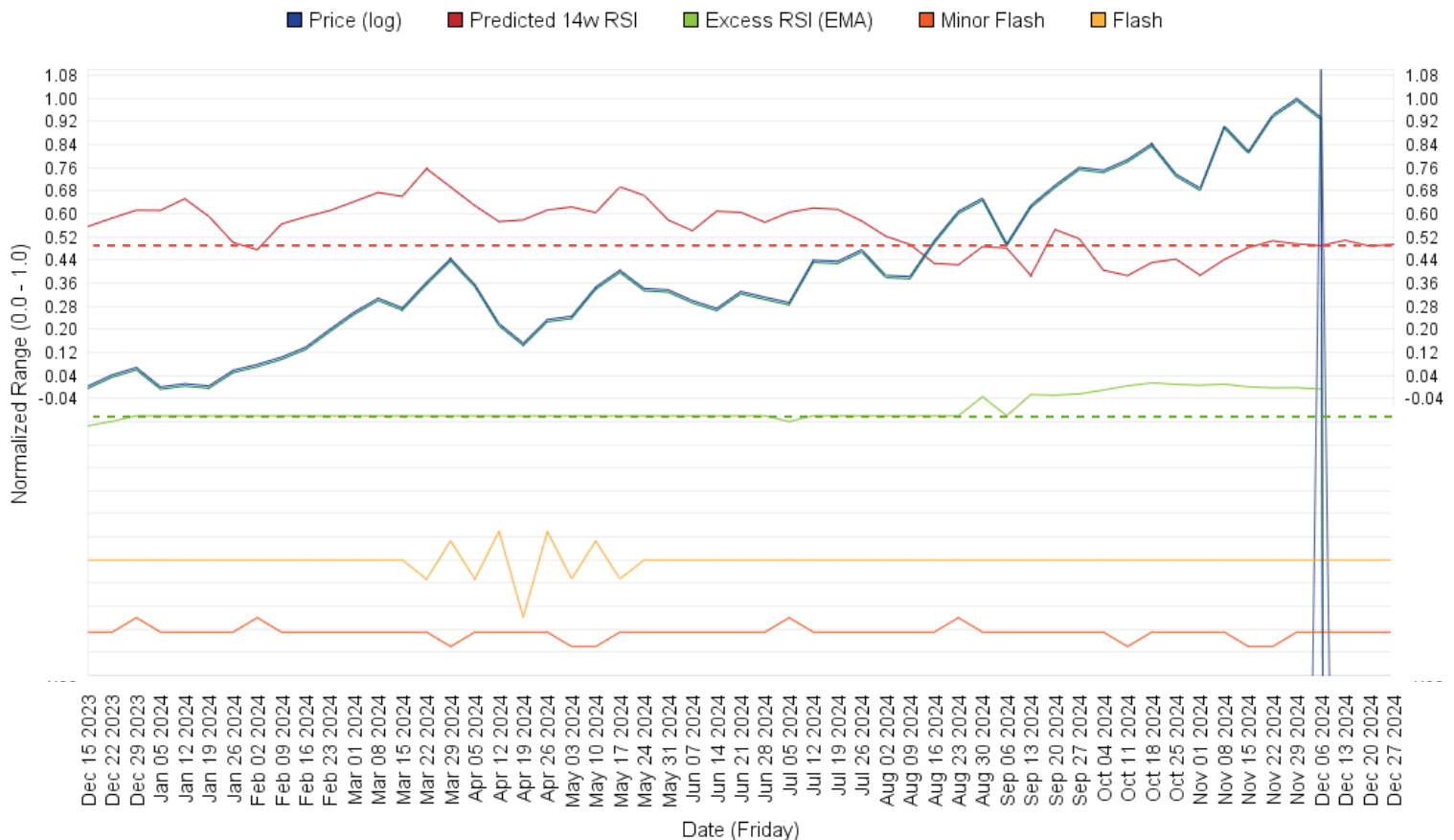
The asset price (heavy blue line) and predicted price momentum measured as the 14w RSI (red) are shown in the upper panel of Figure 3. "Excess RSI (EMA)" is shown as the light green line. Conceptually, this line deviates from its neutral stance, indicated by the dashed light green line, when the actual 14w RSI of the market (not shown) is meaningfully higher or lower than what can be expected from the natural shifts in sentiment as embodied in the predicted RSI. This line can call attention to economic conditions that are unusually strong or weak based on the sustained deviation of the actual RSI relative to the predicted RSI. Excess RSI (EMA) is calculated as the exponential moving average (EMA) of the actual 14w RSI less the predicted 14w RSI (labeled "Excess RSI" on the prior page). Only z-score values in excess of +/-0.5 are shown in order to highlight meaningful deviations. When the line is horizontal, the actual 14w RSI is not meaningfully different than what we expect from the natural shifts in sentiment.

Comments (data as of Dec 06 2024): The Excess RSI (EMA) continues to have a positive deviation, suggesting positive investor views about economic, market, and other conditions. As indicated on the prior page, the positive Excess RSI suggests that investor sentiment about real-world conditions is positive. It has been measurably positive since late Aug 2024. These real-world conditions include economic (e.g. economic growth) and market conditions (e.g., market valuations) but also political conditions. Investors in general do not currently have concerns about the policies of the new administration. *Continued page 5.*

Continued...

Continued from page 4 'RSI Analysis - 1-Year with EMA' - It is worth noting that there was not an abrupt change in Excess RSI around the time of the election, suggesting that the positive price momentum has not been affected by the election. Historically, the status of the Excess RSI (Fig. 2) and Excess RSI (EMA) give an early indication of a change in investor sentiment about real-world economic conditions.

Notes

a) The off-and-on behavior of the Exceptional Macro over recent months is not typical of its long-term behavior. Typically, it remains present or not for longer periods. We interpret the current condition as a neutral (as opposed to negative) indication of the market resilience.

b) The sentiment forecasts represented by the drivers are not always accurate each week. The Flash drivers, which tend to have abrupt beginnings and ends, tend to be more accurate than the more cyclic Long- and Short-Term drivers, which change more gradually.

Additional Notes

Links
Please contact us with questions: contact@cpminvesting.com
See additional notes: www.cpminvesting.com/notes
General information: www.cpminvesting.com

Citations

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 For more information, visit: https://www.invesco.com

Background

Sentiment shifts occur periodically and are described as changes between:
 Optimism|Pessimism   Risk-on|Risk-off   Resilience|Vulnerability   Euphoria|Panic   Aspirational thinking|Critical thinking

Total sentiment reflects economic forces and the naturally occurring forces that directly affect human behavior:
 > Economic forces
   - Investor views on economic conditions
   - Investor views on market fundamentals
   - Investor behavior (e.g., trend following, mean reverting, calendar effects, response to current events)
 > Natural forces - Our focus is here

Naturally Occurring Shifts Have a Big Impact: Naturally occurring sentiment shifts have a bigger impact than many investors realize, and typically explain over 70% of the weekly variability of widely used index price momentum measures such as the Relative Strength Index (RSI). In addition, systematically predicting the future strength of the natural forces can be done more easily and reliably than predicting the future strength of economic forces.

We can Infer Impact of Economic and Market Conditions: When total sentiment deviates meaningfully from the natural shifts, we can infer that economic forces have a higher impact. If we take the actual RSI, for example, which reflects both economic and natural forces, and subtract the effect of the natural forces (represented by the predicted series), the difference is a reasonable gauge of the impact of the economic forces.

Early Indicators of Market Declines: Key early indicators of an impending market correction are a) when Excess RSI (EMA) moves to negative levels, and b) when actual sentiment metrics, such as one of our Market Resilience Indexes or the 14-week RSI, converges with a negatively trending predicted metric. See Note #4 on this page (https://cpminvesting.com/notes).

Two types of Physics-Based Sentiment Drivers: We maintain over two dozen physics-based drivers. There are two general types:
> Cyclic Drivers - sentiment changes gradually over time. The Long- and Short-Term drivers are cyclic.
> Episodic Drivers - sentiment changes abruptly. The Flash and Minor Flash drivers are episodic. Our forecasts of Episodic Drivers tend to be more accurate than those for the Cyclic Drivers.

For descriptions of each driver, see Note #2 on this page (https://cpminvesting.com/notes).

Two Sentiment-Related Metrics: We use two different metrics in our forecasts of sentiment. We forecast the 14-week Relative Strength Index (RSI) to measure price momentum for a market index. Upward sloping RSI indicates positive sentiment.

        https://en.wikipedia.org/wiki/Relative_strength_index

We also forecast our own Market Resilience Index® (MRI) series. The MRI measure return acceleration. Upward sloping MRI indicate positive sentiment. MRI indicate short- and long-term shifts in market resilience for each market index:
> Micro MRI - short-term trends lasting several weeks
> Macro MRI - long-term trends lasting several quarters

The RSI and MRI have different features.
  RSI (Relative Strength Index)
    - Widely used in investment industry
    - Effective in identifying market bottoms
    - Less effective in identifying market tops. RSI can peak several months before the index price peaks.

  MRI (Market Resilience Index)
    - Designed to identify accurately both market tops and bottoms

For descriptions of each driver, see Note #1 on this page (https://cpminvesting.com/notes).

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