



Research for Large Index Fund Provider

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Sentiment-Tilted Index vs. Traded Index Fund

The TIE was asked by one of the largest index fund providers to rebalance their index based off of sentiment. They were intrigued by The TIE's research and wanted to see if a sentiment-tilted index fund should be built in practice.

The assets used to construct The TIE Sentiment Tilted Index's and the weights chosen in the simulated Index Fund **were given by the index fund provider**. The TIE had no discretion in which assets were provided. The composition of the index includes LTC, BTC, ETH, XMR, and BCH. To protect the anonymity of the fund provider we will not disclose the other holdings.

The TIE SENTIMENT TILTED LONG INDEX

- The strategy uses a sentiment based Relative Strength Index – RSI , an indicator that measures the magnitude of recent changes in sentiment , to make trading decisions.
- Higher RSI scores indicate positive trends, while lower scores indicate negative.
- We calculate the signal using daily change in the aggregate sentiment estimate factor.

$$\Delta RawS = RawS_t - RawS_{t-1}^*$$

$$Ratio_t = \frac{7\text{Day Rolling Average of Positive } \Delta RawS}{7\text{Day Rolling Average of Negative } \Delta RawS}$$

$$Sentiment\ RSI_t = 100 - \frac{100}{1 + Ratio_t}$$

* Raw-S is The TIE's unweighted sentiment estimate from the tweets received in trailing 24 hour window

Sentiment RSI Strategy - Description

- We start with Index Fund portfolio weights
- Construct Sentiment RSI on each asset over a 7-Day look back period.
- The strategy holds consist of both long and short positions.
- RSI scores range from 0 to 100
 - Sentiment RSI scores **above 55** suggest positive sentiment trends
 - Sentiment RSI scores **lower than 45** suggest negative sentiment trends
 - Scores ranging from **45 to 55** are considered neutral
- Adjust weights daily according to Sentiment RSI
 - **LONG**
 - Sentiment RSI > 55
 - **SHORT**
 - Sentiment RSI < 45
 - **HOLD**
 - Sentiment RSI in between 45 and 55. Situations where RSI is in neutral range

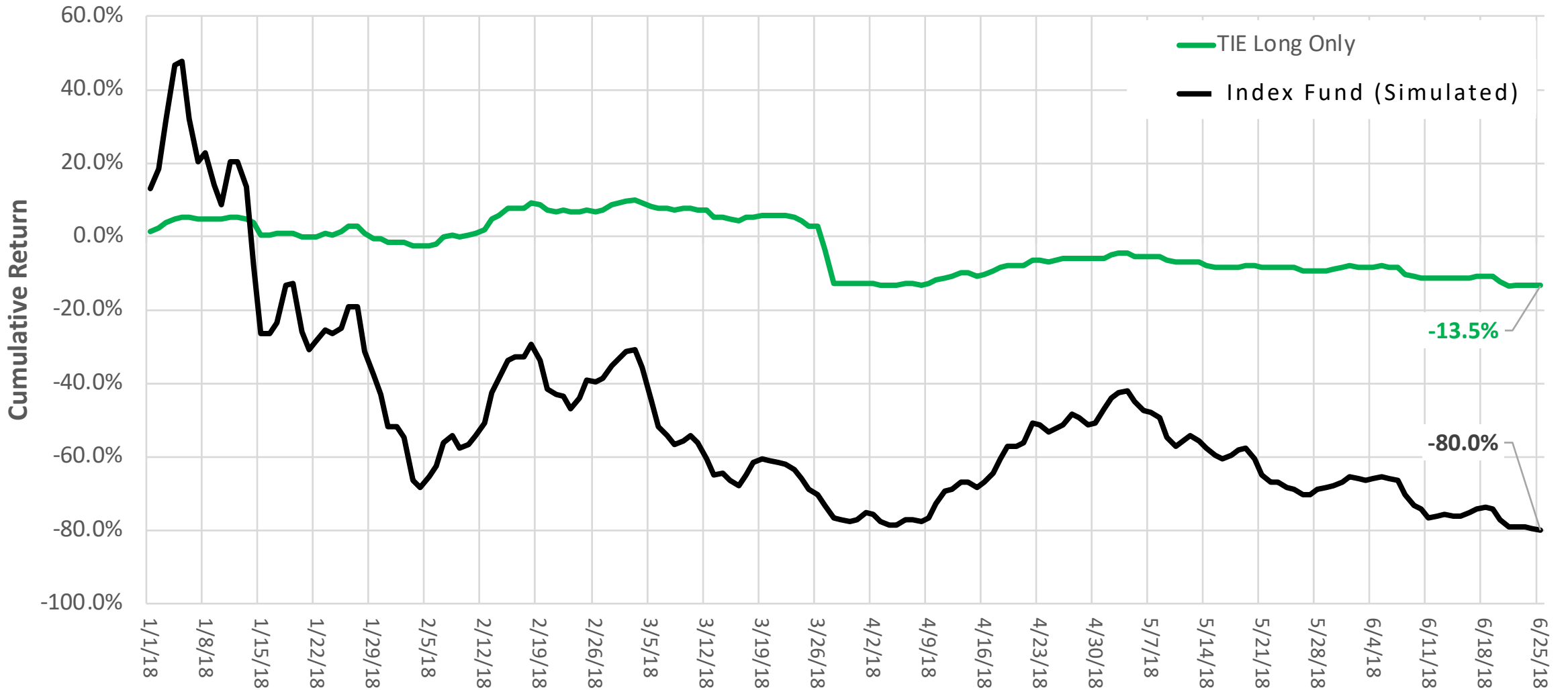
The TIE SENTIMENT TILTED LONG INDEX

- The TIE sentiment tilted LONG index USES a smart beta approach to modify the weights of the Index Fund
- The starting weights for the constituents are chosen to be the same as the Index Fund
- The strategy uses a sentiment tilt to modify the weights of the individual constituents
- We find that the sentiment tilted index has a stable return with an ending value **66.4% above the Index Fund**

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The TIE Sentiment Tilted Long-Only Index

Starting Weights Provided By Index Fund



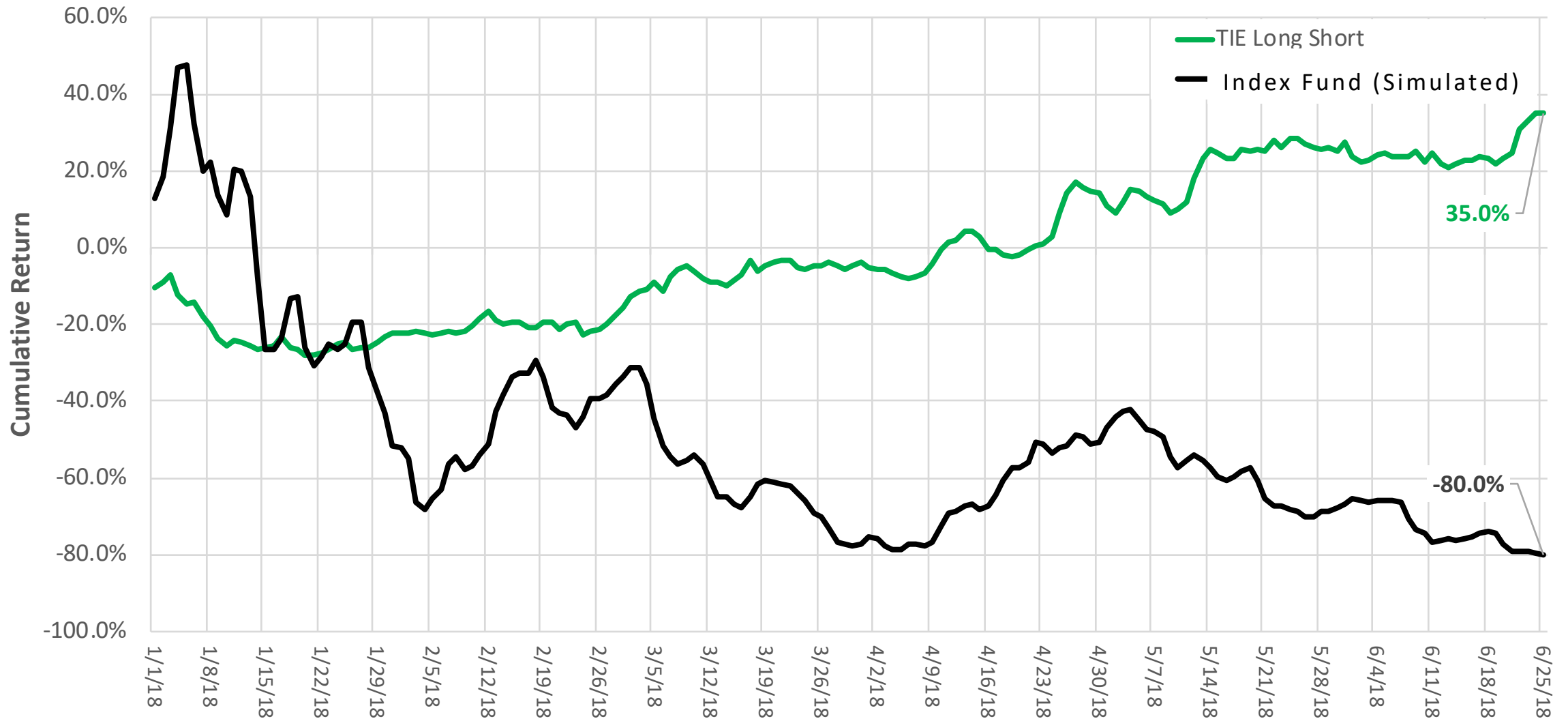
The TIE SENTIMENT TILTED LONG-SHORT INDEX

- The sentiment signals have predictive power over both, positive and negative movements of the securities prices
- The results of the TIE LONG-SHORT INDEX shows a **115% outperformance** to the baseline Index Fund

The TIE

The TIE Sentiment Tilted Long-Short Index

Starting Weights Provided By Index Fund



Sentiment Generates Alpha

- The TIE successfully demonstrated that for an assigned baskets of cryptos, tilting based off of sentiment generates alpha and should be considered in long and short positions.
 - The sentiment tilted index has a stable return with an ending value **66.4% above the Index Fund**
 - The TIE LONG-SHORT INDEX achieved a **115% outperformance** relative to the baseline Index Fund
- The TIE's proprietary sentiment data should be considered for both intra-day and longer-term trading strategies.