The Value of SMA Sentiment Scores ("S-Factors"): An Analysis of Equity Returns using a Close to Close Methodology

To investigate the hidden power of Social Media to predict market movements, Social Market Analytics (SMA) has done numerous back tests on data using its proprietary S-Factors. One of the core metrics (of the 19 produced) by SMA is the S-Score. The trading strategy described here checks for directional patterns in prices of securities by looking at pre-market close S-Scores.

The S-Score is SMA's main sentiment metric. It is a statistical Z-Score that allows end users to detect when current Twitter conversations on a specific security are significantly more positive or negative than normal levels. This structure enables the end user to quantify social media sentiment. For example, when an S-Score reaches positive (or negative) 2.0 it indicates that the current conversation is 2 standard deviations (95%) more positive (or negative) than normal.

Accordingly, the theory is that the positive statistically significant S-Scores (S-Score > 2) should outperform the market and the negative statistically significant S-Scores (S-Score < -2) should underperform the market. We did a study using the Open to Close Methodology for US Equities. The study looked at 9:10 AM (Eastern Time) sentiment and bought the securities at the open price and sold them at the close.

In this new study, we are testing the time sensitivity of S-Scores.

Every day we look at the 15:40 (Eastern Time) pre-close market sentiment, i.e., the S-Score for the 3800 securities in the SMA universe and make a buy decision based off of that. If the S-Score > 2 or S-Score < -2, we buy the security at the close price (16:00 ET) and sell it at next day's close price. It is important to point out that there is no risk management or other performance enhancement in this system. The intent is to show that securities which are active in social media perform differently from the aggregate market. The returns from this test are presented in Chart 1 below.

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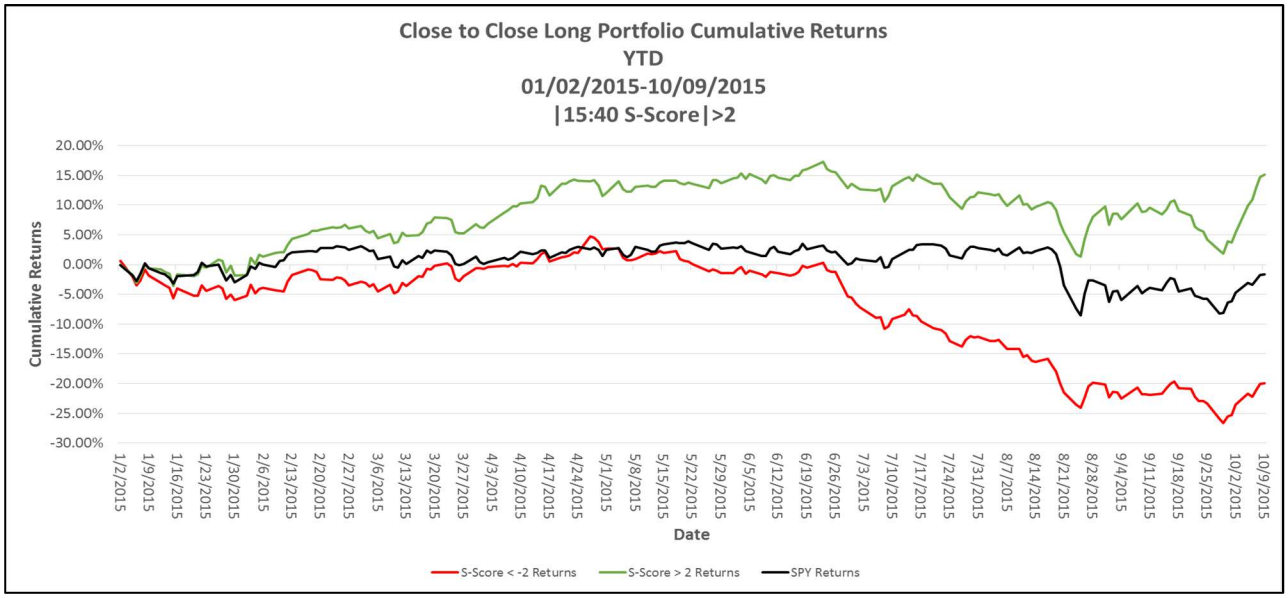
Chart 1: Close to Close Returns of Significantly Positive/Negative Stock vs the SPY



The test period begins in January 2015 and runs through October 2015. It is also important to point SMA has a sophisticated process to screen Twitter accounts. With this enhancement, filtering is done on both what is being said and who is saying it. The effect is seen in the cumulative returns of the stocks on which a trading decision was made based upon the S-Score. The S-Score > 2 stocks outperform the market by over 16%, year to date, and the S-Scores < -2 stocks underperform the market by over 21% year to date. The returns and risk adjusted performance measures (Sharpe Ratios) for the portfolios in Chart 1 can be found in Table 1.

Table 1: Ratio and Returns Analysis

S-Score	Cum. Rtn.	Sharpe Ratio	Sortino Ratio
S-Score > 2	15.11%	1.15	2.07
SPY	-1.62%	-0.06	-0.09
S-Score < -2	-19.95%	-1.57	-2.43

We can observe that the outperformance of positive S-Score stocks and underperformance of negative S-Score stocks from both the chart and the table above. The Sharpe Ratio measures the annualized return for each unit of additional risk taken and the Sortino Ratio measures the annualized return for downside risk and doesn't penalize for risk that generated higher returns. Both the ratios are well above 1 for the S-Score > 2 and less than -1 for S-Score < -2 stocks. These risk adjusted measures support the robustness of returns that we obtained.

A second strategy that we employed was going long on the positive S-Score portfolio and shorting the negative S-Score portfolio which is expected to underperform. We call this the Long-Short Portfolio in the Chart 2 below.

The Table 2 following the Chart 2 looks at the Cumulative Returns and Risk Adjusted Measures for these strategies.

Chart 2: Close to Close Returns of Significantly Positive/Negative and LongShort Portfolio vs the SPY

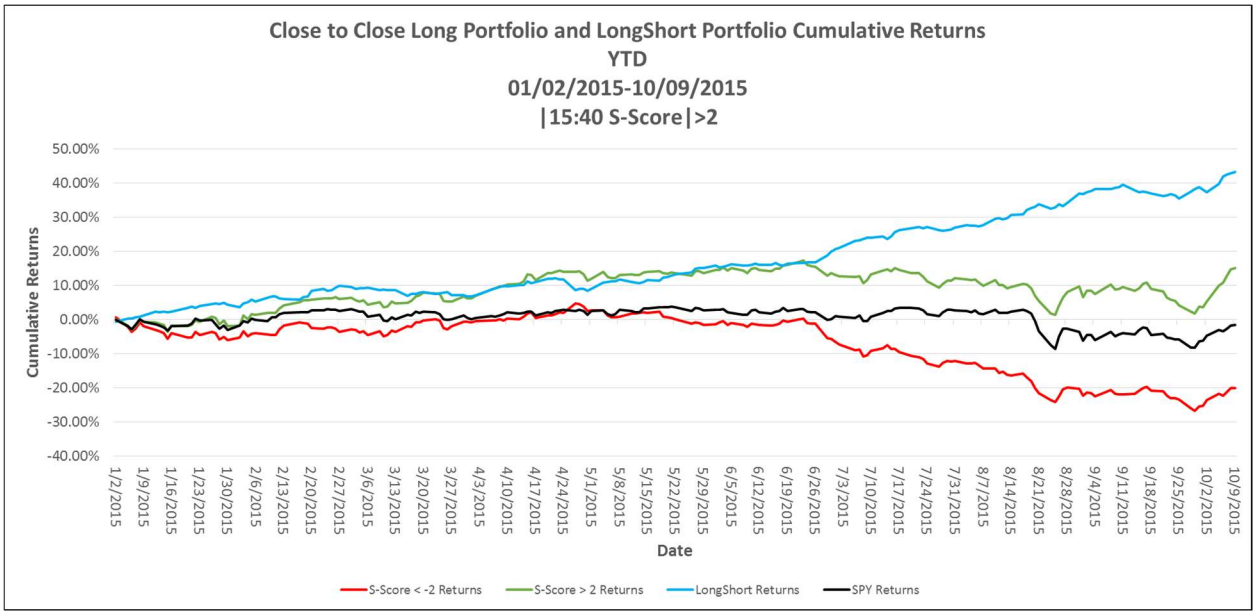
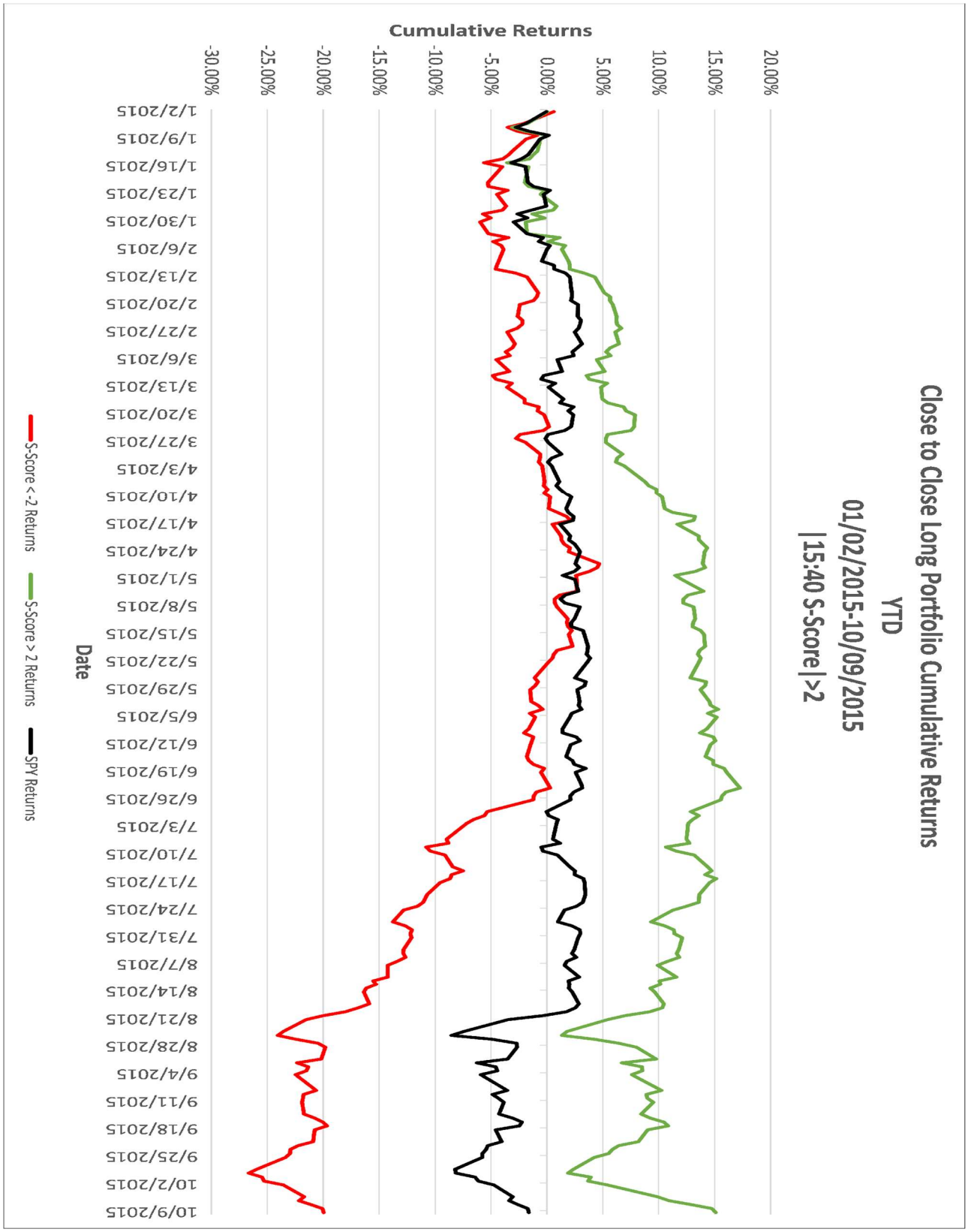
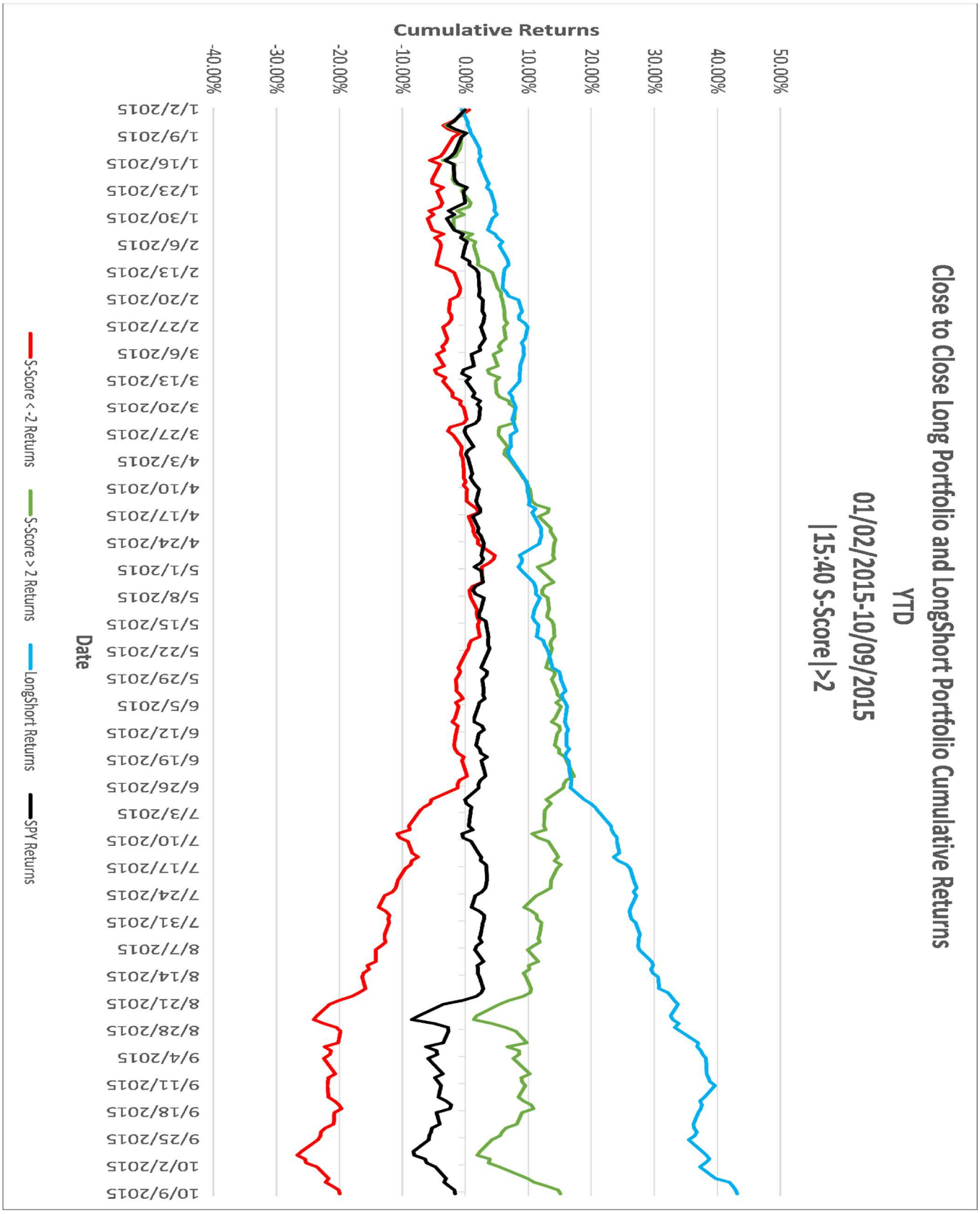


Table 2: Ratio and Returns Analysis

S-Score	Cum. Rtn.	Sharpe Ratio	Sortino Ratio
S-Score > 2	**15.11%**	1.15	2.07
SPY	-1.62%	-0.06	-0.09
S-Score < -2	-19.95%	-1.57	-2.43
Long Short	**43.18%**	4.95	9.22

The Chart and Table show that a Long Short strategy using market close prices would have yielded a 43.18% cumulative return which is close 45% over what the market return would have been using the same strategy. The high Sharpe Ratios and Sortino Ratios indicate high Risk/Return reward for the Long S-Score and Long Short strategies.


Close to Close Long Portfolio Cumulative Returns
YTD
01/02/2015-10/09/2015
|15:40 S-Score|>2
Cumulative Returns
-30.00%
-25.00%
-20.00%
-15.00%
-10.00%
-5.00%
0.00%
5.00%
10.00%
15.00%
20.00%
Date
1/2/2015
1/9/2015
1/16/2015
1/23/2015
1/30/2015
2/6/2015
2/13/2015
2/20/2015
2/27/2015
3/6/2015
3/13/2015
3/20/2015
3/27/2015
4/3/2015
4/10/2015
4/17/2015
4/24/2015
5/1/2015
5/8/2015
5/15/2015
5/22/2015
5/29/2015
6/5/2015
6/12/2015
6/19/2015
6/26/2015
7/3/2015
7/10/2015
7/17/2015
7/24/2015
7/31/2015
8/7/2015
8/14/2015
8/21/2015
8/28/2015
9/4/2015
9/11/2015
9/18/2015
9/25/2015
10/2/2015
10/9/2015
S-Score < -2 Returns
S-Score > 2 Returns
SPY Returns


Close to Close Long Portfolio and LongShort Portfolio Cumulative Returns
YTD
01/02/2015-10/09/2015
|15:40 S-Score|>2
Cumulative Returns
-40.00%
-30.00%
-20.00%
-10.00%
0.00%
10.00%
20.00%
30.00%
40.00%
50.00%
Date
1/2/2015
1/9/2015
1/16/2015
1/23/2015
1/30/2015
2/6/2015
2/13/2015
2/20/2015
2/27/2015
3/6/2015
3/13/2015
3/20/2015
3/27/2015
4/3/2015
4/10/2015
4/17/2015
4/24/2015
5/1/2015
5/8/2015
5/15/2015
5/22/2015
5/29/2015
6/5/2015
6/12/2015
6/19/2015
6/26/2015
7/3/2015
7/10/2015
7/17/2015
7/24/2015
7/31/2015
8/7/2015
8/14/2015
8/21/2015
8/28/2015
9/4/2015
9/11/2015
9/18/2015
9/25/2015
10/2/2015
10/9/2015
S-Score < -2 Returns
S-Score > 2 Returns
LongShort Returns
SPY Returns