

User guide to rank and screening spreadsheet

Listing: Benchmark: Date of Data:										Trend Ranks 3 Established Up 2 Confirmed Up 1 Potential Up (1) Potential Down (2) Confirmed Down (3) Established Down		Momentum and Trend Filters Strong Stocks Weak Stocks Reset Filter		Multi-Factor Score Filters Strong Scores Weak Scores Click on "Reset Filter" after filtering columns.					
										Momentum Ranks 1 Strong upside 2 Improving 3 Weakening 4 Poor									
										Absolute Momentum Phase vs. Benchmark Relative Momentum Phase vs. Benchmark		Absolute Trend Phase vs. Benchmark Relative Trend Phase vs. Benchmark		1 Mos. Relative High vs. Benchmark # of Weeks in a Momentum Uptrend Multi-Factor Score: 4 > positive 2.5-3.9 improvir		Multi-Factor Score 1 month ago		Multi-Factor Score 2 month Absolute Change	
Symb	Description	Industry Group	Sector	Last	Trading Stop, D (20, 0)	Inv. Stop, W (20, 0)													

At the core of the process, we have a 21-factor technical model that is used to rank any list of global stocks. The ranking can be done at an index, ETF, or custom list such as a portfolio holdings. The benchmark, such as the S&P 500, can be changed to rank the components of that index to identify the strongest down to the weakest performing stocks. The same process is used when ranking a list of sector or industry group ETFs vs. the S&P 500 to identify the market’s leadership or detractors. When used at the portfolio level, the process will help a portfolio manager focus on the strongest absolute and relative performers and to reduce or avoid the weakest holdings. A portfolio manager can use a benchmark ranking screen to help identify missed opportunities in their benchmark.

Momentum Ranks of Absolute and Relative Lines

Momentum Ranks	
1	Strong upside
2	Improving
3	Weakening
4	Poor

Absolute Momentum Phase	Relative Momentum Phase vs. Benchmark
Phase ▾	Benchmark ▾

- The Momentum Ranks analyzes where the absolute price of a stock and its relative line vs. a benchmark is in relation to their respective 200-day averages.
 1. Price is above its rising 200-day average
 2. Price is above its declining 200-day average
 3. Price is below its rising 200-day average
 4. Price is below its declining 200-day average
- Stocks can be filtered for one of the four ranks by using the sort buttons below the rank categories.

Trend Ranks of Absolute and Benchmark Relative Lines

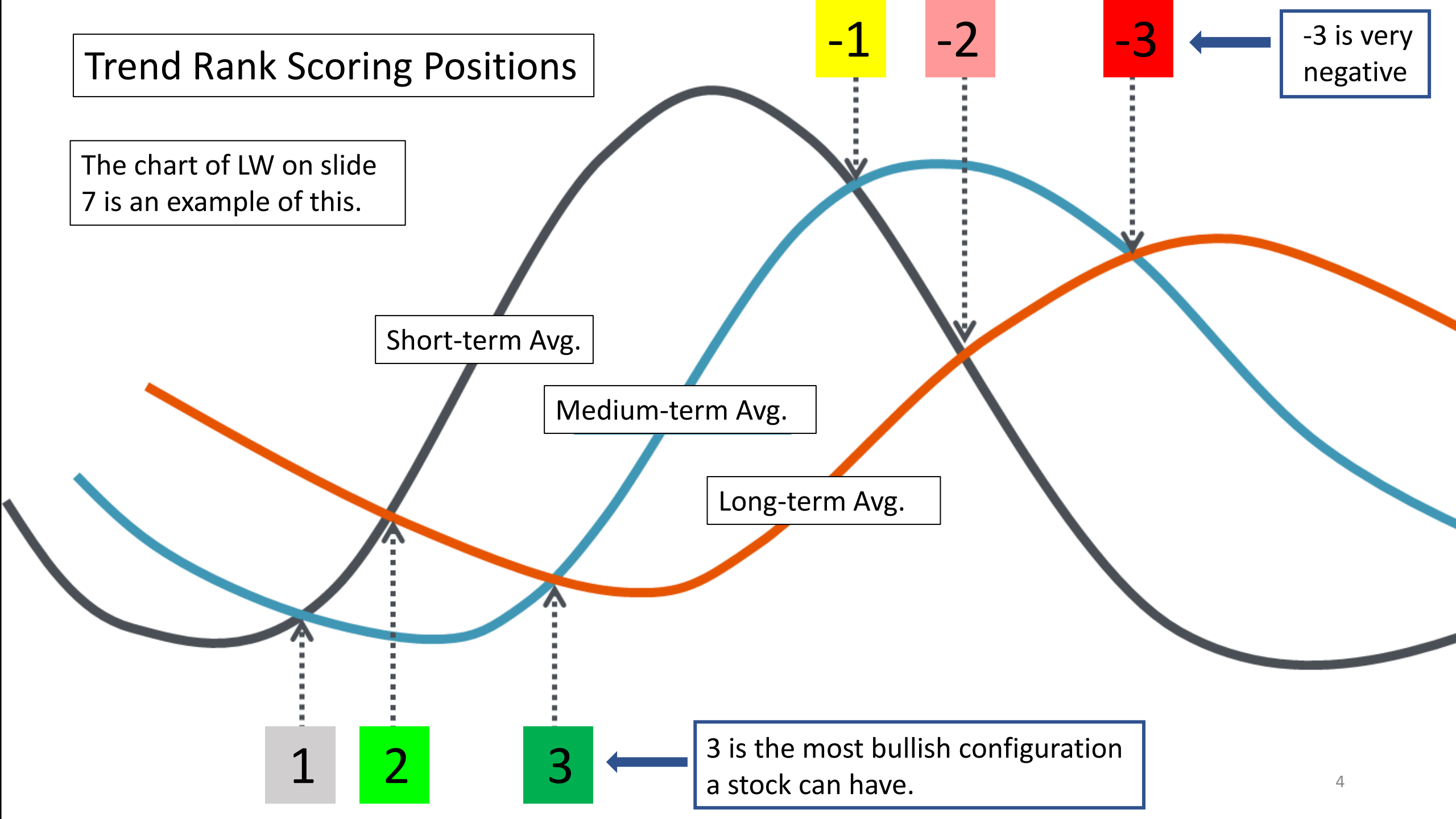
Trend Ranks	
3	Established Up
2	Confirmed Up
1	Potential Up
(1)	Potential Down
(2)	Confirmed Down
(3)	Established Down

Absolute Trend Phase	Relative Trend Phase vs. Benchmark
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- We analyze the relationship of three moving averages for the absolute price of a stock as well as its relative line vs. a benchmark.
- Ideally, when all three moving averages have an upward slope, the price or its relative performance line is in an established uptrend. This is the most bullish configuration one can have, and pullbacks are used to add to a current long.
- When all three averages have a downward slope, the price or its relative is in a very weak position and these stocks should be avoided or looked at as shorts.

Trend Rank Scoring Positions

The chart of LW on slide 7 is an example of this.



Short-term Avg.

Medium-term Avg.

Long-term Avg.

-1

-2

-3

-3 is very negative

1

2

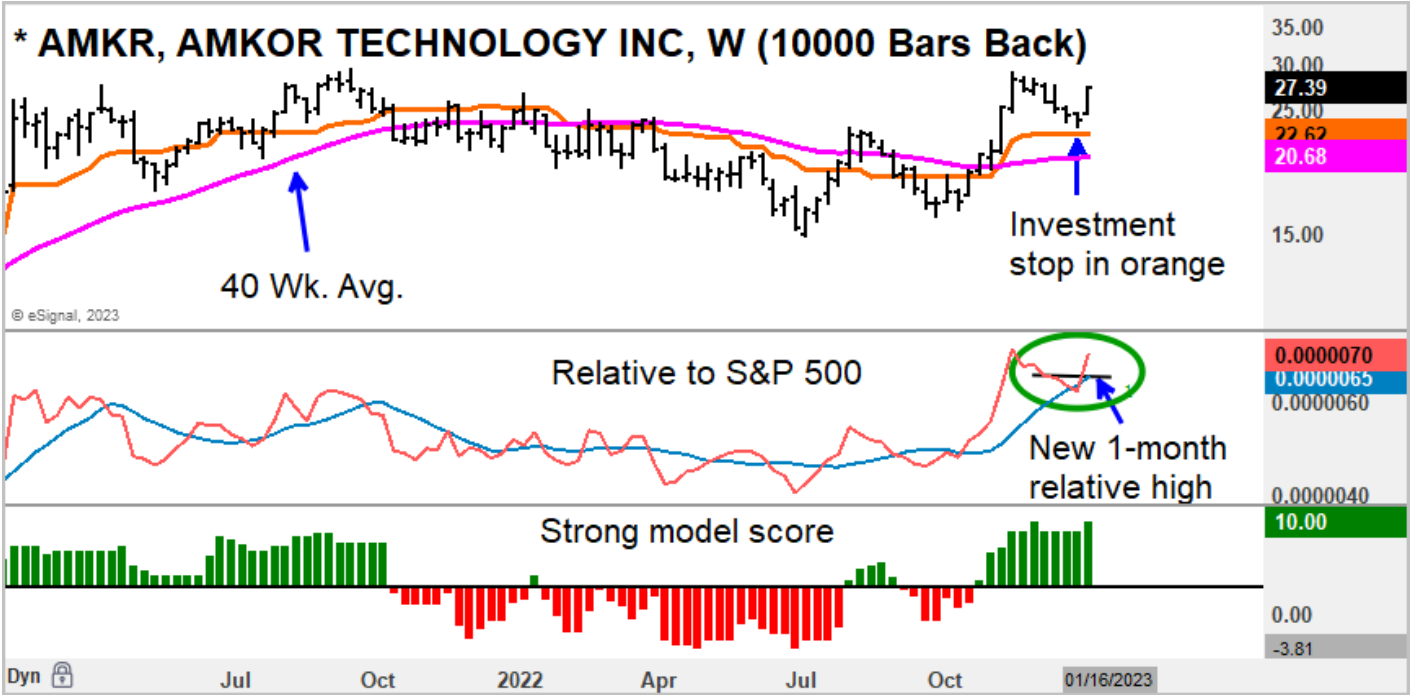
3

3 is the most bullish configuration a stock can have.

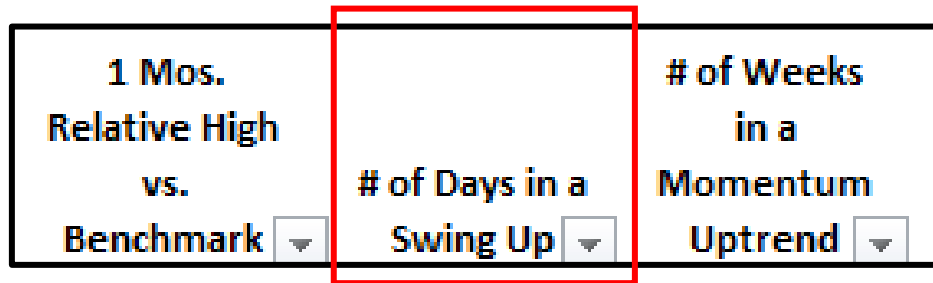
1-month relative high

1 Mos. Relative High vs. Benchmark ▾	# of Days in a Swing Up ▾	# of Weeks in a Momentum Uptrend ▾
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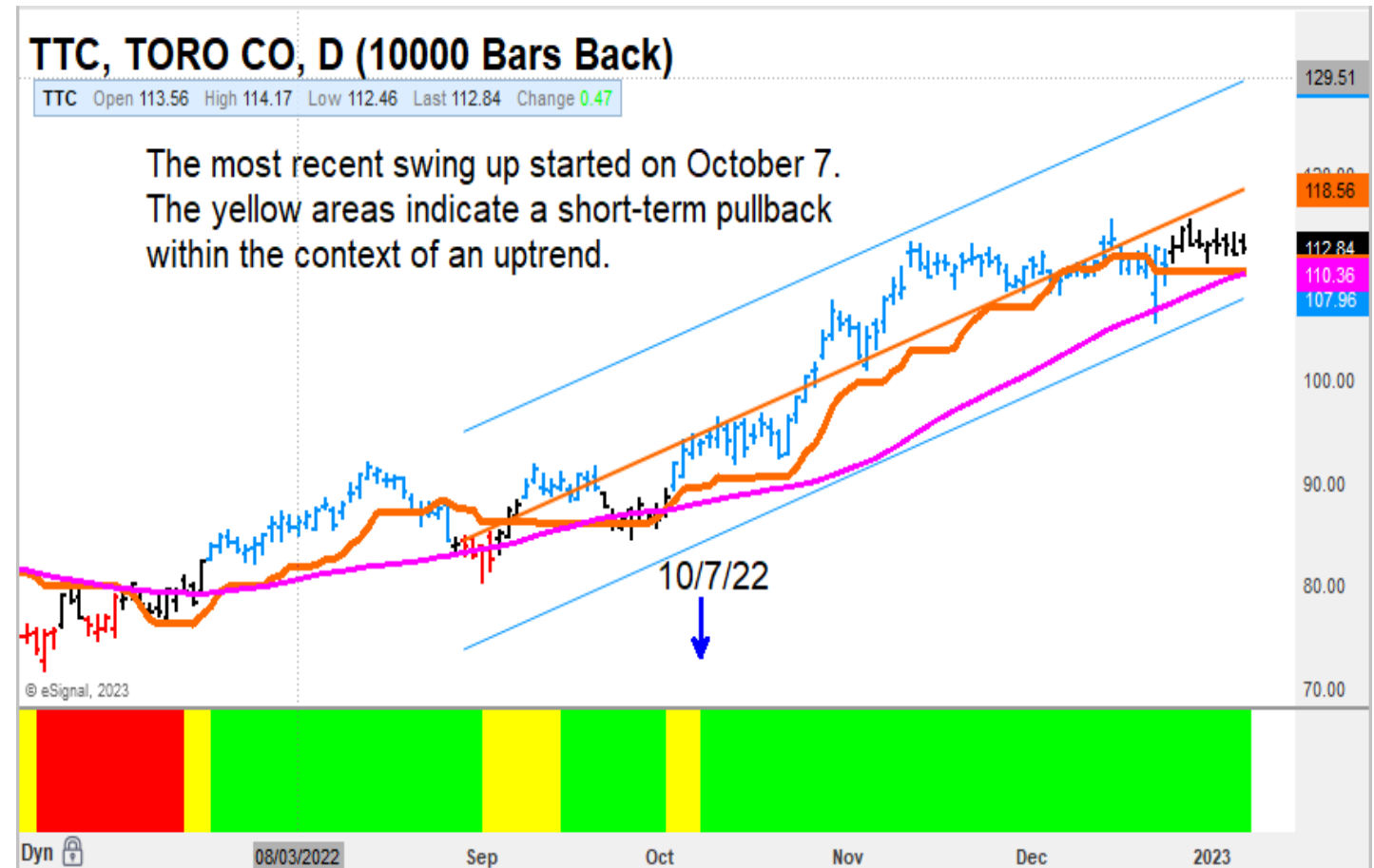
- If a stock is making a 1-month relative high vs. its benchmark, it will be noted with a "1". This is a quick visual for a portfolio manager to see which stocks are strong relative performers. A stock making a 1-month relative high gets an added positive value to the overall Multi-Factor Score.



Number of days in a swing up phase



- As depicted in the chart, we use a crossover of three daily moving averages to help identify a positive swing up in price unfolding.
- The start of the green area marks the beginning of the positive swing. This swing up phase remains intact until there is a change in trend.



Number of weeks in a momentum uptrend

1 Mos. Relative High	vs.	# of Days in a Swing Up	# of Weeks in a Momentum Uptrend
Benchmark ▾		Swing Up ▾	Uptrend ▾

- This model factor indicates the number of weeks a stock has a positive turn up in trend.
- We look to buy a pullback when the daily swing up recycles down within the context of this uptrend.



Multi-Factor Model Score

**Multi-Factor
Score:
4 > positive
2.5-3.9 improving** ▼

- A universe of stocks are ranked based on a number of factors such as:
 1. Absolute and Relative momentum and trend ranks
 2. 1-month relative highs
 3. Persistency of money flow on multiple time frames. And other factor inputs.
- The score range is from +10 to -10. A score of 4 or > is favorable. The higher the score, the stronger the absolute and relative performance. Stocks dropping below 2.5 have either a weak absolute and or relative trend and should be reduced. As a weak subset of the list, one should look at this list as hedges in the group.

There are two mechanical stop levels one can use. Both daily and weekly stops are based on a 20-period average mean range in a stock. The weekly investment stop can be used by portfolio managers to give a stock some wiggle room to move, and the daily stop will look to provide a tighter stop based on the daily timeframe. Examples of these two stops are on pages 12 and 13.

Symb	Description	Industry Group	Sector	Last	Trading Stop, D	Inv. Stop, W
AMKR	AMKOR TECHNOLOGY INC	Semiconductor Equipment	Information Technology	27.39	25.47	22.62

Multi-Factor Scoring Spreadsheet

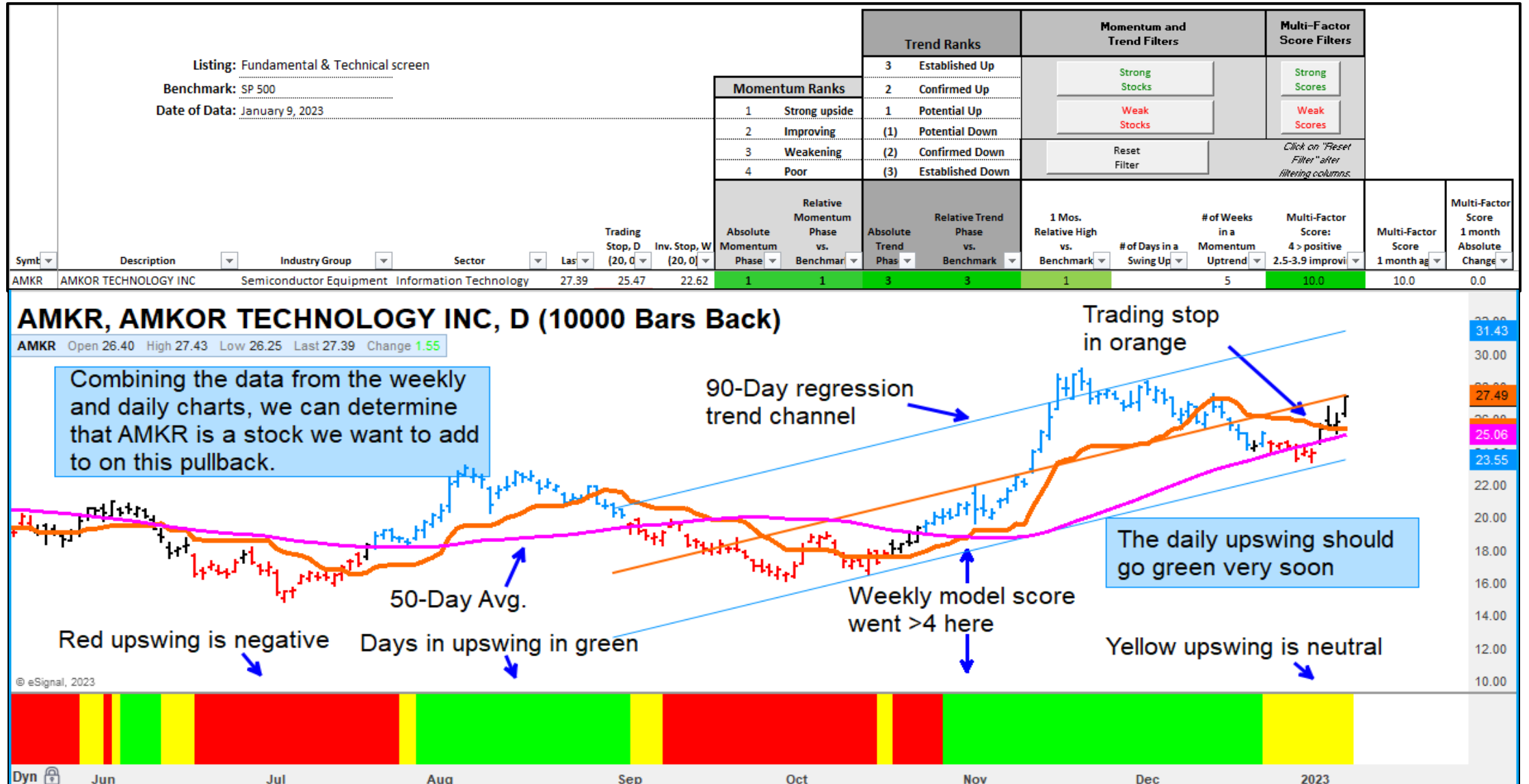
- In the following page, we show the spreadsheet filtering features based on our proprietary rankings of a stock's absolute and relative momentum and intermediate-term absolute trend.
- “Relative” refers to the relative performance of the stock vs. a benchmark. The outperformance or underperformance of a stock to its benchmark is the heaviest weighting in our Multi-Factor Model.
- Our Multi-Factor ranking helps to identify stocks with the strongest absolute and relative performance in a given benchmark or portfolio.
- Portfolio managers should look for long and underweight or short ideas in these two buckets.

Stocks can be filtered by Momentum and Trend as well as our Multi-Factor Model

Listing: Fundamental & Technical screen							Trend Ranks		Momentum and Trend Filters			Multi-Factor Score Filters								
Benchmark: SP 500							3 Established Up		Strong Stocks			Strong Scores								
Date of Data: January 9, 2023							2 Confirmed Up		Weak Stocks			Weak Scores								
							1 Strong upside		Reset Filter			Click on "Reset Filter" after filtering columns.								
							2 Improving													
							3 Weakening													
							4 Poor													
							Relative Momentum		Relative Trend		1 Mos. Relative High vs. Benchmark		# of Weeks in a Momentum Uptrend		Multi-Factor Score: 4 > positive 2.5-3.9 improvi		Multi-Factor Score 1 month ago		Multi-Factor Score 1 month Absolute Change	
Symt	Description	Industry Group	Sector	Last	Trading Stop, D [20, 0]	Inv. Stop, W [20, 0]	Absolute Momentum Phase vs. Benchmark	Absolute Trend Phase vs. Benchmark	1 Mos. Relative High vs. Benchmark	# of Days in a Swing Up	# of Weeks in a Momentum Uptrend	Multi-Factor Score: 4 > positive 2.5-3.9 improvi	Multi-Factor Score 1 month ago	Multi-Factor Score 1 month Absolute Change						
ELF	E L F BEAUTY INC	Personal Products	Consumer Staples	58.05	55.55	47.44	1	1	3	3	1	58	24	10.0	10.0	0.0				
SMCI	SUPER MICRO COMPUTER INC	Technology Hardware, Store	Information Technology	84.39	85.23	72.75	1	1	3	3	1	36	36	10.0	10.0	0.0				
AMKR	AMKOR TECHNOLOGY INC	Semiconductor Equipment	Information Technology	27.39	25.47	22.62	1	1	3	3	1	5	5	10.0	10.0	0.0				
LSCC	LATTICE SEMICONDUCTOR	Semiconductors	Information Technology	66.53	69.38	60.50	1	1	3	3	1	4	4	10.0	9.0	1.0				
KLAC	KLA CORPORATION	Semiconductor Equipment	Information Technology	397.59	392.94	334.88	1	1	3	3	1	2	2	10.0	8.4	1.7				
FLEX	FLEX LTD	Electronic Manufacturing S	Information Technology	22.27	22.16	19.77	1	1	3	3	1	17	17	9.3	9.3	0.0				
PLXS	PLEXUS CORP	Electronic Manufacturing S	Information Technology	107.94	106.25	99.19	1	1	3	3	1	19	19	9.3	9.3	0.0				
AVGO	BROADCOM INC	Semiconductors	Information Technology	588.43	555.69	503.03	2	1	3	3	1	36	0	9.2	5.8	3.4				
SCHW	SCHWAB(CHARLES)CORP	Investment Banking & Brok	Financials	84.54	80.47	75.18	2	1	3	3	1	5	8	9.2	8.2	1.0				
ACLS	AXCELIS TECHNOLOGIES INC	Semiconductor Equipment	Information Technology	87.54	82.27	69.30	1	1	3	3	1	38	4	9.1	7.6	1.5				

A snapshot of the top ten ranked stocks in this custom screen that was based on both fundamental and technical criteria. After the preliminary screening, the list is ranked in our multi-factor ranking model, as displayed here. On the following pages, we review the bullish setup in AMKR. The stock has a score of 10 with strong momentum and trend ranks and making a 1-month relative high. AMKR is also well positioned above both the trading and investment stops.

Putting it all together



Another example of a long idea

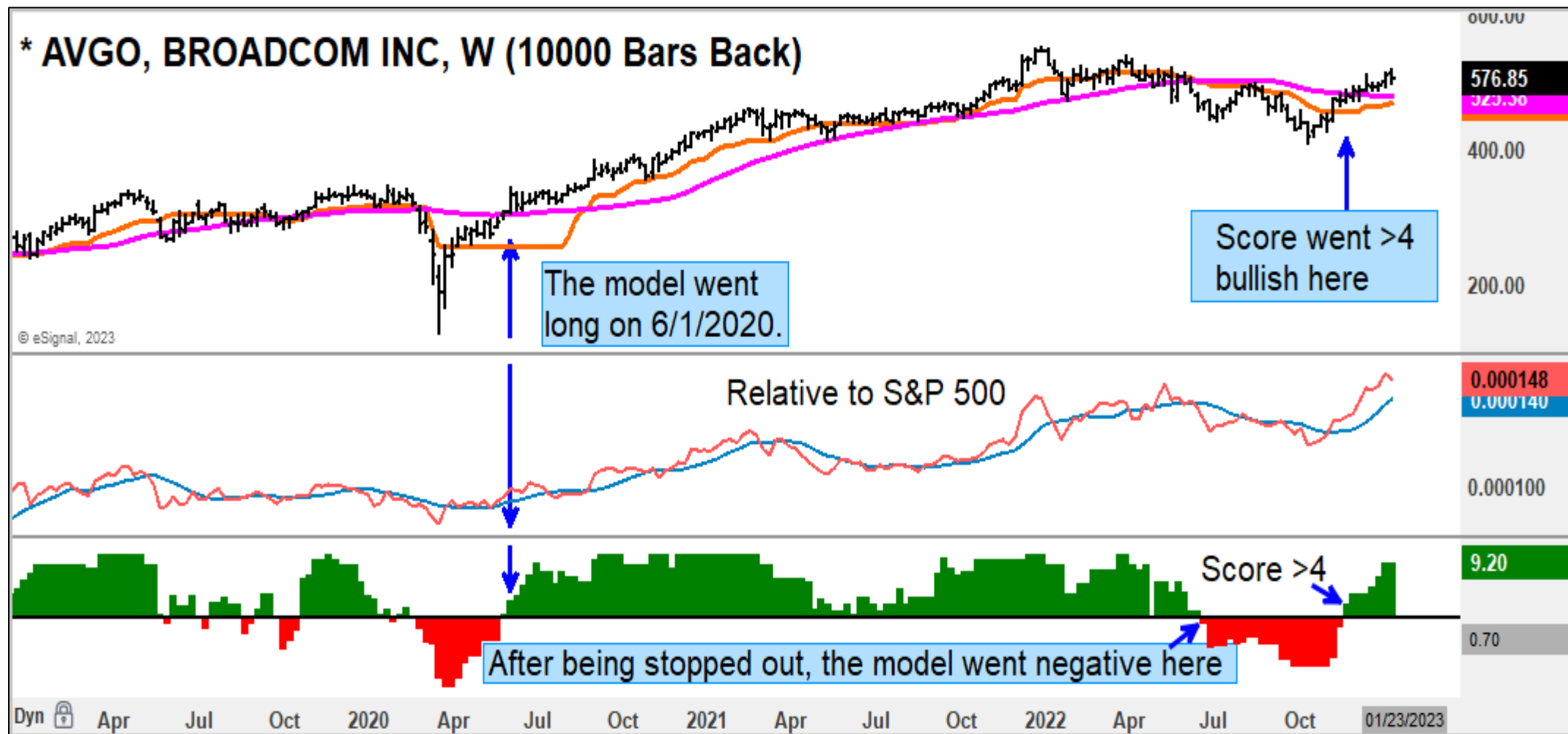
Listing: Fundamental & Technical screen
 Benchmark: SP 500
 Date of Data: January 9, 2023

				Momentum Ranks		Trend Ranks		Momentum and Trend Filters		Multi-Factor Score Filters						
				1	Strong upside	3	Established Up	Strong Stocks		Strong Scores						
				2	Improving	2	Confirmed Up	Weak Stocks		Weak Scores						
				3	Weakening	1	Potential Up	Reset Filter		Click on "Reset Filter" after filtering columns.						
				4	Poor	(1)	Potential Down									
				(2)	Confirmed Down	(2)	Confirmed Down									
				(3)	Established Down	(3)	Established Down									
Symb	Description	Industry Group	Sector	Last	Trading Stop, D	Inv. Stop, W	Absolute Momentum Phase	Relative Momentum Phase vs. Benchmark	Absolute Trend Phase	Relative Trend Phase vs. Benchmark	1 Mos. Relative High vs. Benchmark	# of Days in a Swing Up	# of Weeks in a Momentum Uptrend	Multi-Factor Score: 4 > positive 2.5-3.9 improvi	Multi-Factor Score 1 month ago	Multi-Factor Score 1 month Absolute Change
AVGO	BROADCOM INC	Semiconductors	Information Technology	588.43	555.69	503.03	2	1	3	3	1	36	0	9.2	5.8	3.4

Momentum and trend ranks are very strong

In this example, AVGO has bullish momentum and trend ranks, and making a 1 month relative high. A big positive is to see the big 1 month jump higher in the multi-factor model score going from 5.8 to 9.2 an increase of +3.4. That field is something one can filter on.

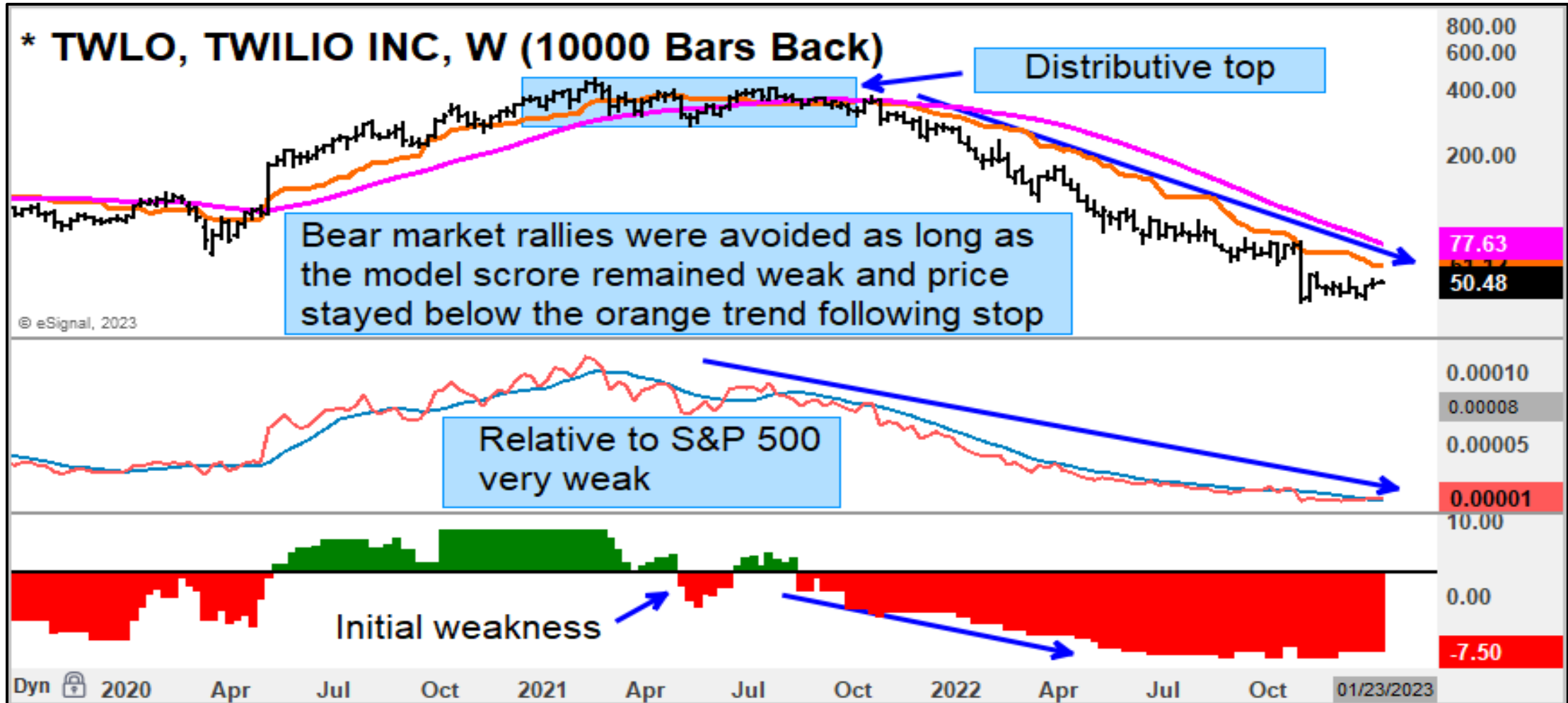
Strong Score = Long Trade



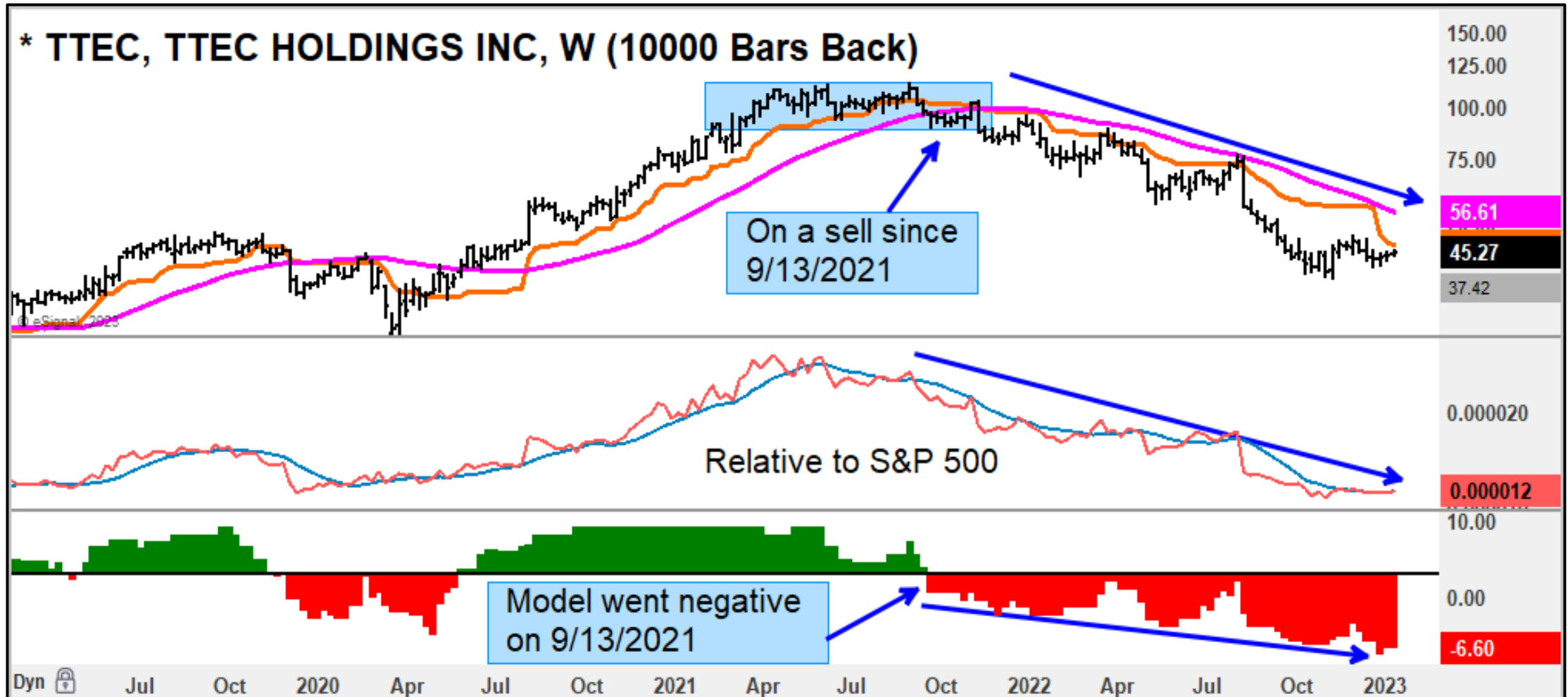
Weak ranked stocks as short ideas 1/11/23

Listing: Short Ideas							Trend Ranks		Momentum and Trend Filters			Multi-Factor Score Filters				
Benchmark: SP 500							3 Established Up		Strong Stocks			Strong Scores				
Date of Data: January 9, 2023							2 Confirmed Up		Weak Stocks			Weak Scores				
							Momentum Ranks		Reset Filter			Click on "Reset Filter" after filtering columns.				
							1 Strong upside									
							2 Improving									
							3 Weakening									
							4 Poor									
							Absolute Momentum Phase vs. Benchmark		Relative Trend Phase vs. Benchmark		1 Mos. Relative High vs. Benchmark		Multi-Factor Score: 4 > positive		Multi-Factor Score 1 month ago	
Symb	Description	Industry Group	Sector	Last	Trading Stop, D (20, 0)	Inv. Stop, W (20, 0)	Phase	Benchmark	Phase	Benchmark	Benchmark	Up	Uptren	2.5-3.9 improvir	1 month ago	Multi-Factor Score 1 month Absolute Change
TWLO	TWILIO INC	Internet Services & Infrastru	Information Technology	50.48	48.21	61.12	4	4	-3	-3	1			-7.5	-8.5	1.0
PYPL	PAYPAL HOLDINGS INC	Data Processing & Outsource	Information Technology	77.08	72.58	82.84	4	4	-3	-3	1			-7.5	-7.35	(0.2)
TTEC	TTEC HOLDINGS INC	Data Processing & Outsource	Information Technology	45.27	45.45	47.28	4	4	-3	-3	1			-6.6	-3.5	(3.1)
NOW	SERVICENOW INC	Systems Software	Information Technology	378.56	392.89	409.85	4	4	-3	-3	0			-6.2	-3.6	(2.6)
VEEV	VEEVA SYSTEMS INC	Health Care Technology	Healthcare	161.08	169.43	178.84	4	4	-3	-3	0			-6.2	-1.8	(4.4)

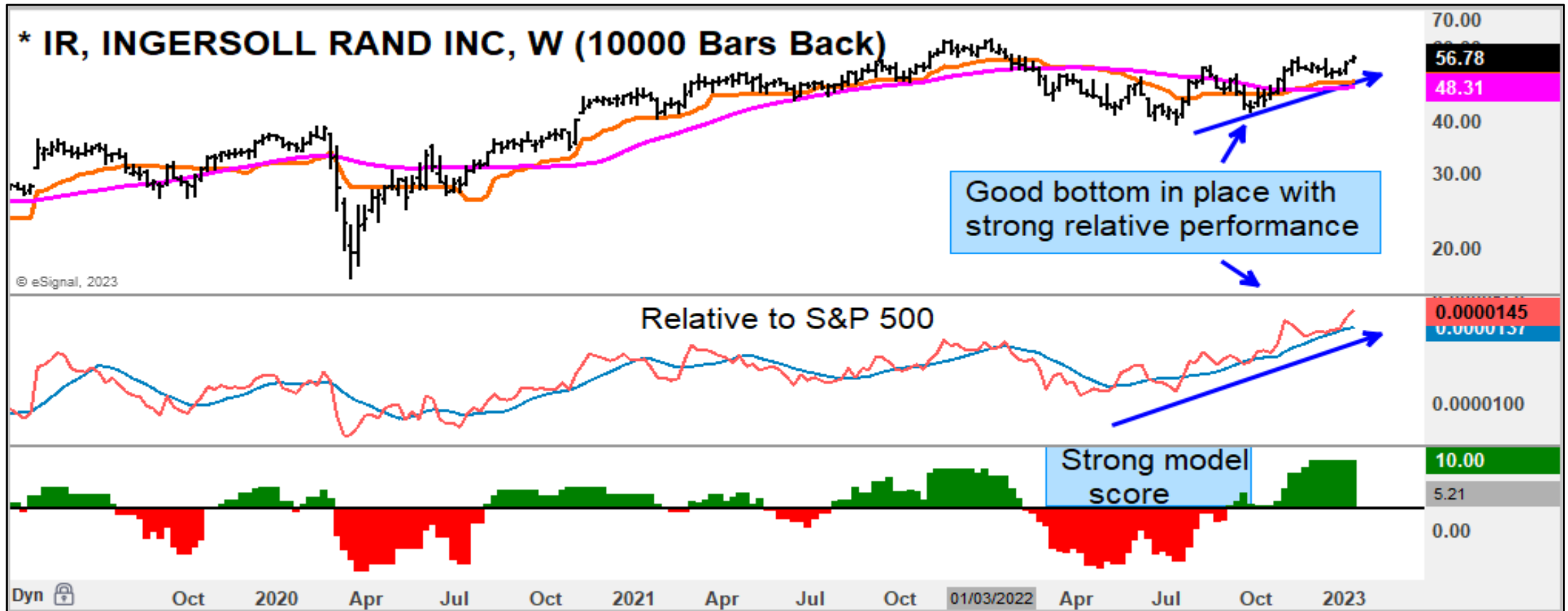
Bottom ranked stock as of 1/11/23



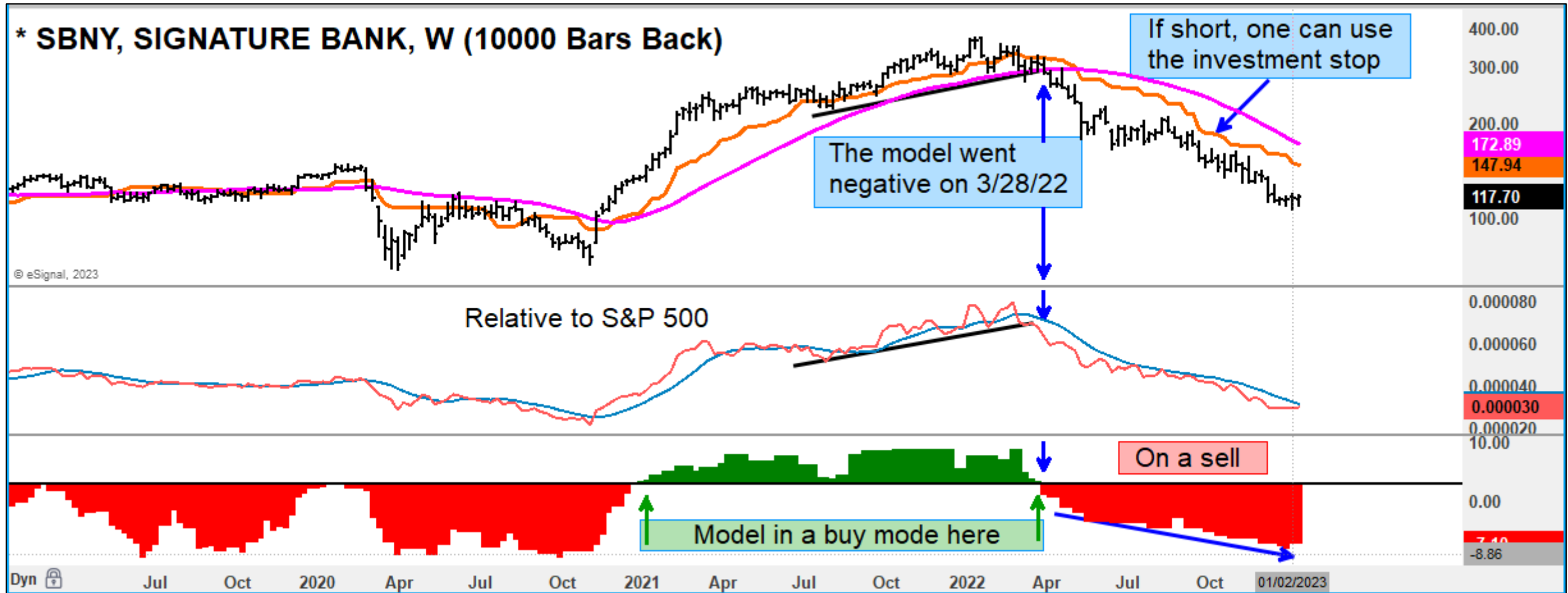
Bottom ranked stock as of 1/11/23



One of the top ranked stocks in the S&P 500 that is firing on all cylinders.



The model captured the meat of the move up from early 2021 to March 2022 and has been on a sell since then.



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