As of October 31, 2023

COMMENTARY

- Our models' consistently bearish view (at least until early November) has proven to be justified for much of the last few months.
- While the generally bearish posture remains—albeit in an attenuated state— there is an emerging narrative that we haven't seen in some months: that there are legitimate buying opportunities and value-seeking trades for those with the appetite to search for them. Language describing equities (whether in the aggregate or specifically) as cheap or undervalued is now heavily dominant vs. previously ascendant "expensive" language.
- To be clear, this is a pairwise comparison, and is mainly an expression of a drop in the volume of conversation about still-overvalued tech stocks.
- However, at a sector level, the amount of chatter framing this and market action more broadly as setting
 up a "value rotation" is very high. Interestingly, while we have modeled and tracked that language pattern, we haven't found it to be particularly predictive. That is, there are enough True Believers in value
 investing that just about anything seems to prompt an emerging "value rotation" narrative in some circle.
- For that reason, we continue to focus a bit more on our high level macro-narrative signals.

SIGNAL VALUES AS OF OCTOBER 31, 2023

SIGNAL CATEGORY	SIGNAL STATE	DIRECTION
Central Bank Policy	Hawkish	Bearish
Stock Story Types	Fundamentals-Focused	Bearish
Cheap Narrative	Neutral	Neutral
Expensive Narrative	Neutral	Neutral
Cheap vs. Expensive	Cheap	Bullish
Fading Expensive Narrative	Neutral	Neutral
Rising Expensive Narrative	Neutral	Neutral
Bullish Narrative	Neutral	Neutral
Bearish vs. Bullish	Neutral	Neutral
Aggregate View		Bearish

As of October 31, 2023

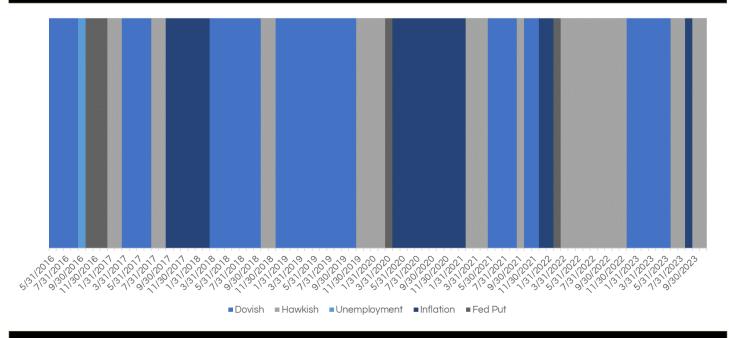
SIGNAL REFERENCE—CENTRAL BANK POLICY

This model examines the Density and Narrative Strength / Attention of certain archetypal narratives relating to Central Bank Policy. We classify the dominant narrative among five such archetypes, which we believe reflect different states of common knowledge that both respond to and influence investor behavior. Present archetypes include Dovish, Hawkish, Inflation-Focused, Unemployment-Focused and Fed Put. Historical subsequent period results for directional S&P 500 exposure and historical states for the model are presented below.

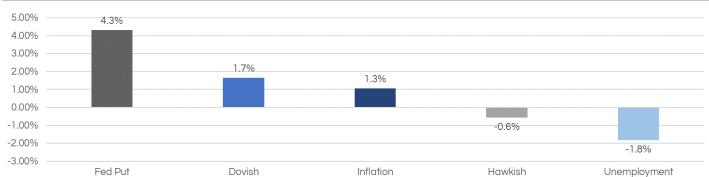
CURRENT STATE

HAWKISH (BEARISH)

HISTORICAL SIGNAL TRIGGER PERIODS



HISTORICAL MONTHLY S&P RETURNS BY STATE





As of October 31, 2023

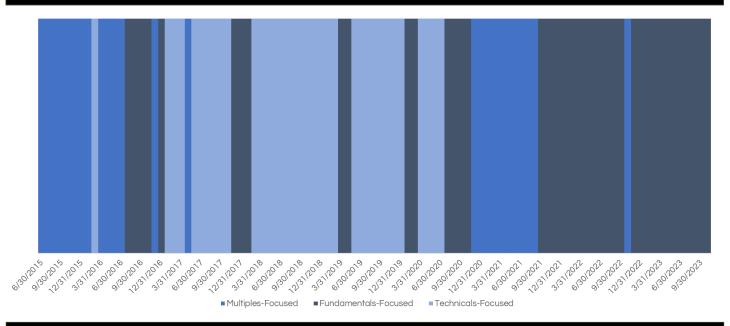
SIGNAL REFERENCE—STOCK STORY TYPES

This model examines the Density and Narrative Strength / Attention of certain linguistic archetypes of investment theses promoted in financial media and by sell side research houses. We think there are three such archetypes: multiples-focused, technicals-focused or fundamentals-focused. That is, analysts and commentators tend to describe why investments are attractive or unattractive using one or more of those linguistic sets. We think the market's varying tendency to frame investment outcomes in terms of each of these archetypes is indicative of risk appetites.

CURRENT STATE

FUNDAMENTALS-FOCUSED (BEARISH)

HISTORICAL SIGNAL TRIGGER PERIODS



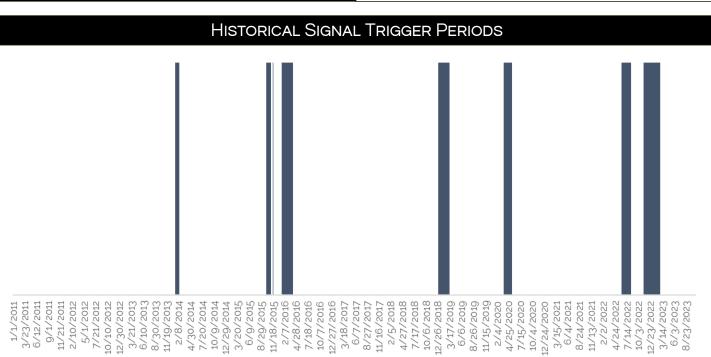


As of October 31, 2023

SIGNAL REFERENCE—EXTREME CHEAP NARRATIVE

This model examines the Density and Narrative Strength / Attention of narratives describing the stock market in general as being inexpensive, cheap or a "good value." We believe that extreme values for these language patterns may be predictive of marginal investor buying behaviors and above average forward-looking excess returns for equity markets, sectors and individual securities. The signal indicates <u>LONG</u> S&P 500 exposure on an extreme value.

CURRENT STATE	NEUTRAL
HIST. DAILY S&P RETURN WHEN ACTIVE	0.28%



Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
11/10/2022—2/28/2023	5.00%	17.39%
06/10/2022—8/12/2022	6.64%	44.32%
03/24/2020—05/14/2020	27.83%	460.27%
12/28/2018—03/14/2019	13.40%	81.46%

As of October 31, 2023

SIGNAL REFERENCE—EXTREME EXPENSIVE NARRATIVE

This model examines the Density and Narrative Strength / Attention of narratives describing the stock market in general as being expensive or overpriced. We believe that extreme values for these language patterns may be predictive of marginal investor selling behaviors and below average forward-looking excess returns for equity markets, sectors and individual securities. The signal indicates SHORT or REDUCED S&P 500 exposure on an extreme value.

-	·
CURRENT STATE	Neutral
HIST. DAILY S&P RETURN WHEN ACTIVE	-0.06%
HISTORICAL SIGNAL	. Trigger Periods
2011 2011 2012 2012 2012 2012 2013 2013 2013 2014 2014 2014 2014 2014 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2016 2017 2017 2017 2018 2018 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019	//2017 //2018 //2018 //2019 //2019 //2019 //2020 //2020 //2021 //2021 //2021 //2021 //2022 //2022 //2022 //2022 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023 //2023
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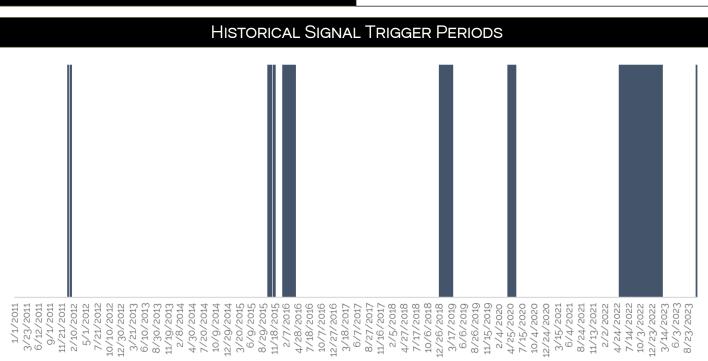
Most Recent Triggers	ACTIVE PERIOD S&P RETURN	ANN. ACTIVE PERIOD S&P RETURN
09/05/2023—09/30/2023	-5.37%	-53.91%
09/04/2020—11/04/2020	-0.13%	-0.75%
02/25/2020—03/20/2020	-28.42%	N/A
03/14/2018—04/02/2018	-6.56%	-71.01%

As of October 31, 2023

SIGNAL REFERENCE—CHEAP VS. EXPENSIVE

This model examines the relative deviation of the Density and Narrative Strength / Attention of narratives describing the stock market as being cheap and expensive, respectively, relative to their historical norms. In short, we believe that the *relative dominance* of cheap archetypal language over expensive archetypal language may be predictive of investor risk-taking behaviors above and beyond the raw value of the density and influence of cheap language itself. The signal indicates LONG or INCREASED S&P 500 exposure on an extreme value differential in favor of Cheap language.

CURRENT STATE	CHEAP (BULLISH)
HIST. DAILY S&P RETURN WHEN ACTIVE	0.16%



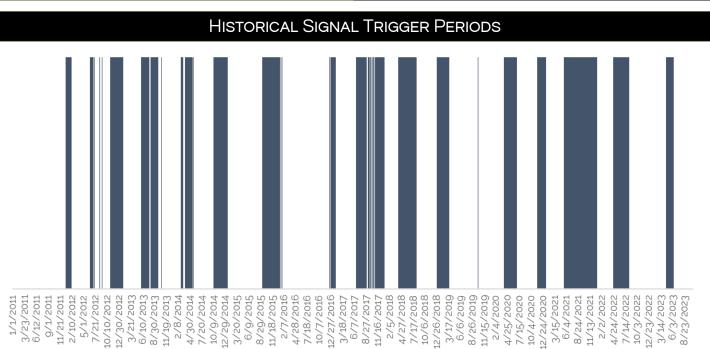
Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
05/13/2022—03/08/2023	0.45%	0.54%
04/08/2020—06/05/2020	20.53%	217.34%
12/26/2018—03/29/2019	21.23%	111.15%
01/19/2016—04/13/2016	11.38%	58.01%

As of October 31, 2023

SIGNAL REFERENCE—FADING EXPENSIVE NARRATIVE

This model examines the rate of change of the Density and Narrative Strength / Attention of narratives describing the stock market as being expensive. In short, we believe that sharp rates of change in the use of archetypal language in favor of cheapness may be predictive of investor risk-taking behaviors above and beyond the raw value of the density and influence of cheap language itself. The signal indicates INCREASED S&P 500 exposure on a rapid shift away from Expensive archetypal language.

CURRENT STATE	NEUTRAL
HIST. DAILY SEP RETURN WHEN ACTIVE	0.11%



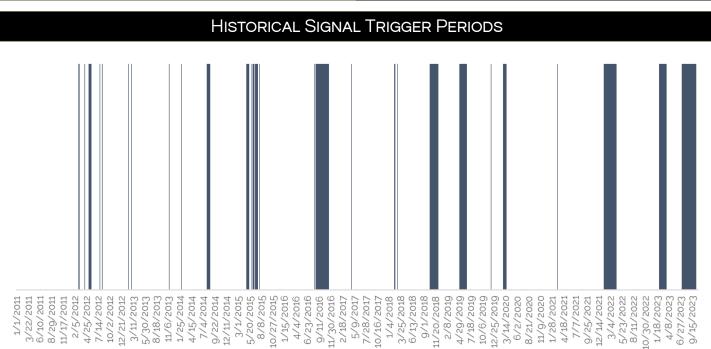
Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	ANN. ACTIVE PERIOD S&P RETURN
04/24/2023—06/14/2023	5.36%	44.26%
04/27/2022—8/11/2022	1.18%	4.07%
05/24/2021—01/04/2022	16.38%	27.91%
11/20/2020—01/14/2021	6.22%	48.16%

As of October 31, 2023

SIGNAL REFERENCE—RISING EXPENSIVE NARRATIVE

This model examines the rate of change of the Density and Narrative Strength / Attention of narratives describing the stock market as being expensive. In short, we believe that sharp rates of change in the use of archetypal language in favor of cheapness may be predictive of investor risk-taking behaviors above and beyond the raw value of the density and influence of cheap language itself. The signal indicates REDUCED S&P 500 exposure on a rapid shift toward Expensive archetypal language.

CURRENT STATE	NEUTRAL
HIST. DAILY S&P RETURN WHEN ACTIVE	0.04%



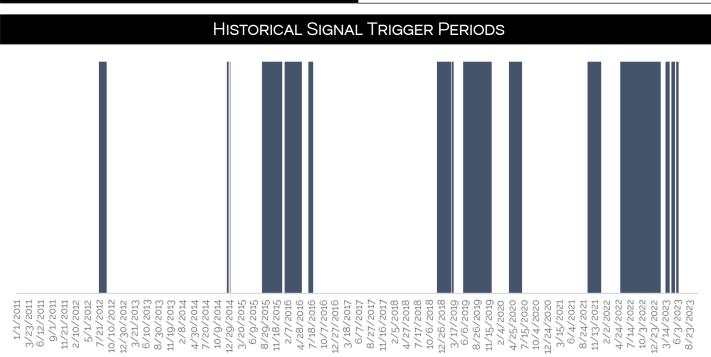
Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
07/11/2023—10/12/2023	-4.98%	-18.00%
02/03/2023- 03/24/2023	5.24%	45.22%
01/18/2022—04/13/2022	-3.77%	-15.06%
05/02/2019—06/18/2019	0.14%	1.08%

As of October 31, 2023

SIGNAL REFERENCE—BEARISH VS. BULLISH

This model examines the relative deviation of the Density and Narrative Strength / Attention of narratives describing using the tropes and linguistic patterns of bullish and bearish archetypes, respectively, relative to their historical norms. We believe that the *relative dominance* of bearish over bullish archetypes may be indicative of a narrative structure saturated by pessimism in ways that create upside asymmetry to individual assets and risky assets more broadly. The signal indicates LONG or INCREASED S&P 500 exposure on an extreme value differential in favor of Bearish language.

CURRENT STATE	NEUTRAL
HIST. DAILY SEP RETURN WHEN ACTIVE	0.11%



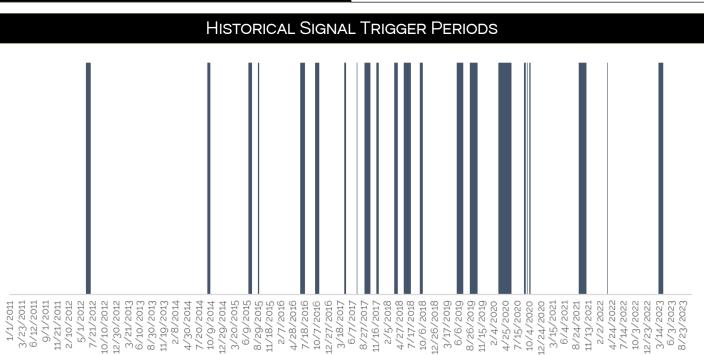
MOST RECENT >30 DAY TRIGGERS	ACTIVE PERIOD S&P RETURN	ANN. ACTIVE PERIOD S&P RETURN
05/10/2022—02/09/2023	0.40%	0.53%
09/27/2021- 12/29/2021	7.96%	34.62%
04/06/2020—07/02/2020	26.38%	164.11%
05/29/2019—12/06/2019	12.74%	25.61%

As of October 31, 2023

SIGNAL REFERENCE—BULLISH NARRATIVE

This model examines the rate of change of the Density and Narrative Strength / Attention of narratives describing bull cases for individual assets or the market in general. We believe that bull case language tends to gain influence after the case has been demonstrated in market performance—thus, it is the relative absence of bull case narratives that we expect to be moderately predictive of above average returns. The signal indicates INCREASED S&P 500 exposure on a low density/influence of Bullish archetypal language.

CURRENT STATE	NEUTRAL
HIST. DAILY S&P RETURN WHEN ACTIVE	0.16%



Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	ANN. ACTIVE PERIOD S&P RETURN
09/15/2021—11/03/2021	4.36%	39.25%
03/13/2020—06/05/2020	29.39%	202.32%
08/30/2019—10/15/2019	2.58%	21.87%
05/31/2019—07/12/2019	8.33%	97.22%