As of July 31, 2022

COMMENTARY

- Our models remain in an identical position for August.
- On the one hand, the models see no abatement in the generally bearish bias towards fundamentalfocused linguistic patterns and hawkish archetypal language.
- Likewise, our models focused on the specific "core four" most common narrative archetypes for stocks (i.e. Bullish, Bearish, Expensive, Cheap), however, remain in a universally bullish posture:
 - Rapidly fading reliance on "expensive" archetypal language;
 - Rapidly rising language describing markets as "undervalued" or "oversold"; and
 - Continued oversaturation of bearish archetypal language that is historically associated with a rotation in risk-seeking behaviors.
- We accordingly remain neutral on risky assets.
- With that said, while our view is more positive than in early 2022, we continue to think of "neutrality" as a
 field in which any of multiple narratives—stagflation, deflationary recession and slow-but-inflationary
 growth—could still return to a dominant position.

SIGNAL VALUES AS OF JULY 31, 2022

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

As of July 31, 2022

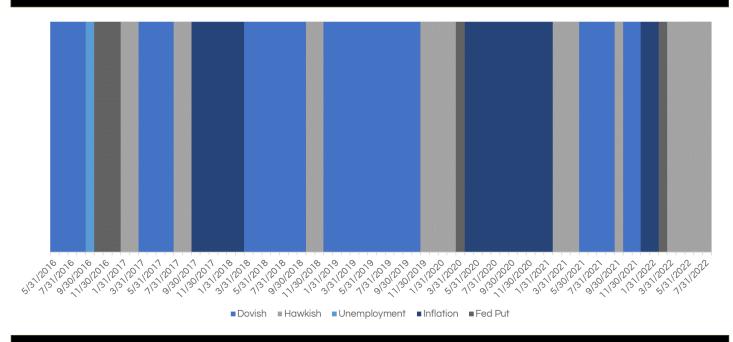
SIGNAL REFERENCE—CENTRAL BANK POLICY

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.

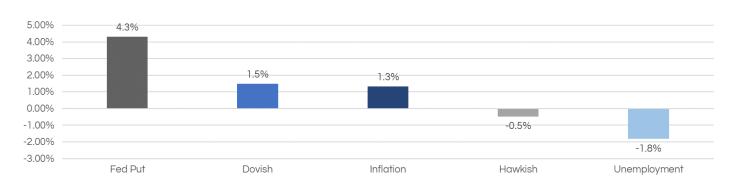
CURRENT STATE

HAWKISH (BEARISH)

HISTORICAL SIGNAL TRIGGER PERIODS



HISTORICAL MONTHLY S&P RETURNS BY STATE



As of July 31, 2022

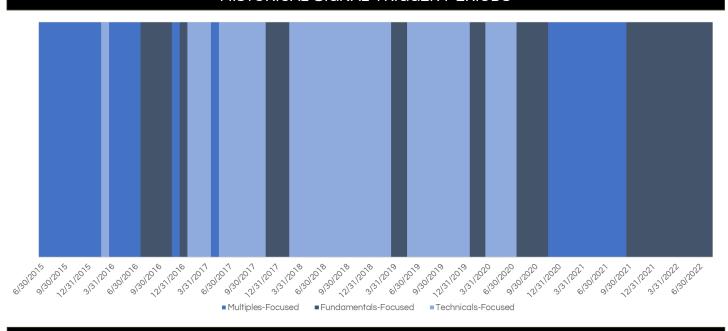
SIGNAL REFERENCE—STOCK STORY TYPES

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



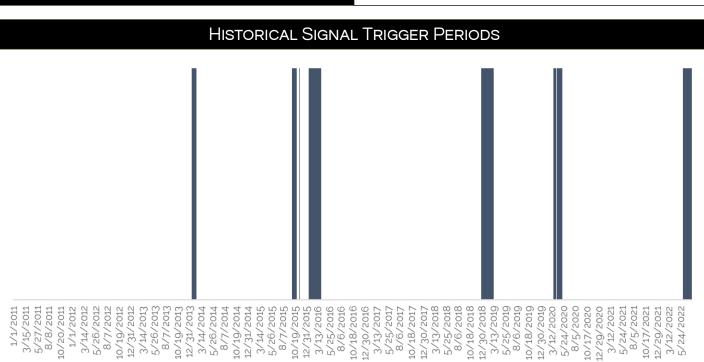


As of July 31, 2022

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 LONG S&P 500 exposure on an extreme value.

CURRENT STATE	СНЕАР
HIST. DAILY SEP RETURN WHEN ACTIVE	0.28%



Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	ANN. ACTIVE PERIOD S&P RETURN
06/10/2022—Present	2.97%	22.81%
03/24/2020—05/14/2020	27.83%	460.27%
12/28/2018—03/14/2019	13.40%	81.46
01/01/2016—03/31/2016	10.08%	61.62%

As of July 31, 2022

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	0.00%
HISTORICAL SIGNAL	. Trigger Periods
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
1/1/2011 3/15/2011 8/8/2011 10/20/2011 1/1/2012 3/14/2012 5/26/2012 10/19/2012 12/31/2012 3/14/2013 5/26/2012 12/31/2013 3/14/2013 5/26/2014 6/26/2014 10/19/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2014 11/31/2015 11/	12/30/2016 3/33/2016 3/33/2016 8/6/2017 10/18/2017 12/30/2017 3/13/2018 5/25/2018 8/6/2018 10/18/2019 10/18/2019 10/18/2020 10/17/2020 10/17/2020 10/17/2020 10/17/2020 10/17/2020 10/17/2020 112/20/2021 112/20/2021 112/20/2021 112/2020

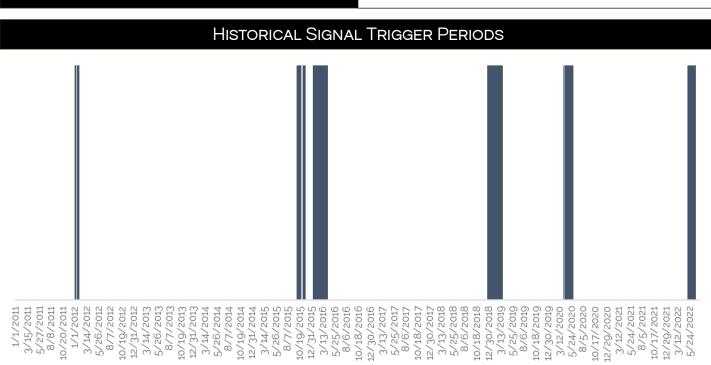
Most Recent Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
09/04/2020—11/04/2020	-0.13%	-0.75%
02/25/2020—03/20/2020	-28.42%	N/A
03/14/2018—04/02/2018	-6.56%	-71.01%
10/12/2016—11/07/2016	-0.14%	-1.85%

As of July 31, 2022

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	EMERGING CHEAP (BULLISH)
HIST. DAILY S&P RETURN WHEN ACTIVE	0.25%



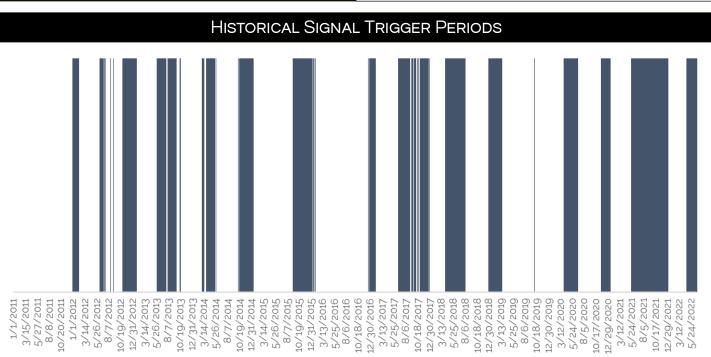
Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
05/13/2022—Present	5.36%	26.89%
04/08/2020—06/05/2020	20.53%	217.34%
12/26/2018—03/29/2019	21.23%	111.15%
01/19/2016—04/13/2016	11.38%	58.01%

As of July 31, 2022

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	Bullish
HIST. DAILY S&P RETURN WHEN ACTIVE	0.11%



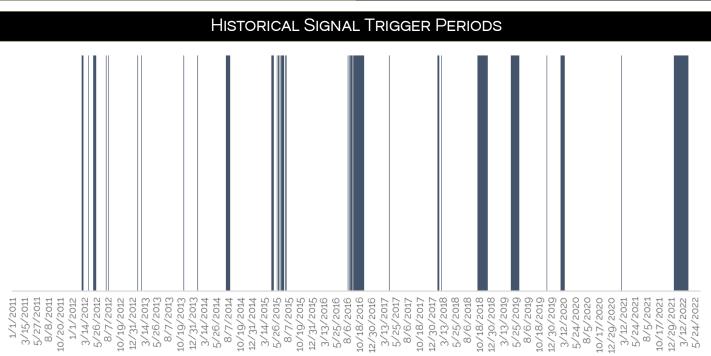
MOST RECENT >30 DAY TRIGGERS	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
04/27/2022—Present	-0.66%	-2.48%
05/24/2021—01/04/2022	16.38%	27.91%
11/20/2020—01/14/2021	6.22%	48.16%
04/06/2020—06/29/2020	23.24%	145.33%

As of July 31, 2022

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%



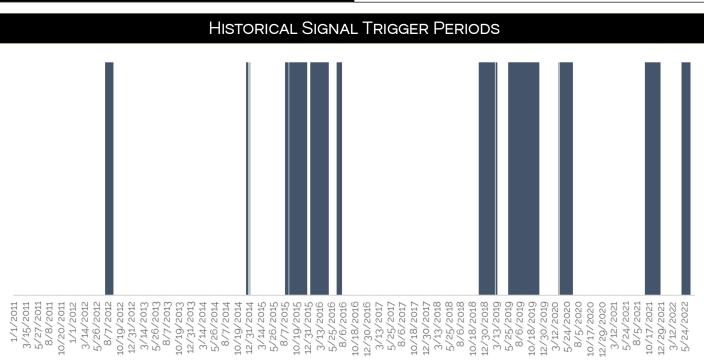
Most Recent >30 Day Triggers	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
01/18/2022—4/13/2022	-3.77%	-15.06%
02/26/2020—03/20/2020	-26.19%	N/A
05/02/2019—06/18/2019	0.14%	1.08%
10/09/2018—12/08/2018	-8.36%	-41.21%

As of July 31, 2022

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	SATURATED BEARISH (BULLISH)
HIST. DAILY S&P RETURN WHEN ACTIVE	0.14%



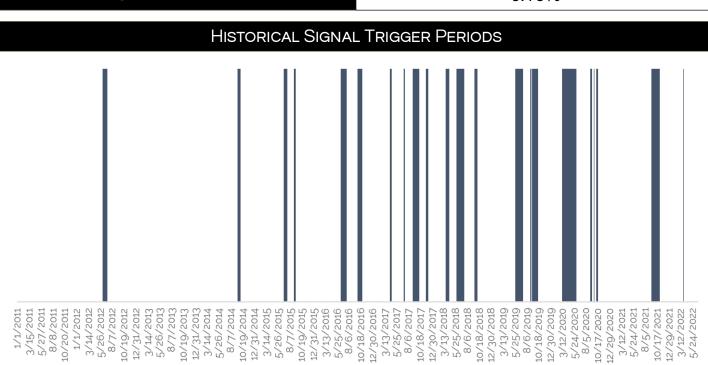
MOST RECENT >30 DAY TRIGGERS	ACTIVE PERIOD S&P RETURN	Ann. Active Period S&P Return
05/10/2022—Present	3.82%	17.90%
09/27/2021- 12/29/2021	7.96%	34.62%
04/06/2020—07/02/2020	26.38%	164.11%
05/29/2019—12/06/2019	12.74%	25.61%

As of July 31, 2022

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%