# Epsilon Theory Professional Monitors Update

July 2020

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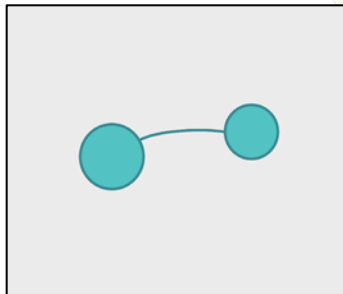
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**Refresher:**

How we measure narrative structure
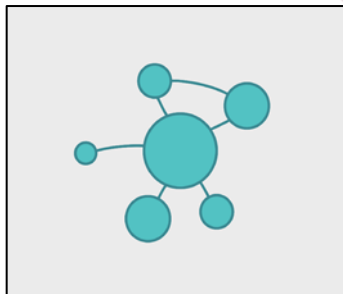
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# Narrative Research is Natural Language Processing (NLP)

Parse an unstructured text or transcript for words and phrases.

Compare each word and phrase in one unstructured text to each word and phrase in another text, creating a matrix of the linguistic relationship between the two texts.

Repeat the process at immense scale across thousands of documents.

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# CASE: Cohesion, Attention, Sentiment & Engagement

*Our research analyzes publicly-sourced financial media to identify and measure the structure of narratives <u>before</u> and <u>as</u> they begin to influence financial markets.*

| >20 million articles annually from >32,000 sources |
|---|

| | |
|---|---|
| **Identifying Narratives** | • Identify key narrative-influenced topics on index-tradable dimensions (e.g. sectors, companies, countries, factors)<br>• Define universe of sources, fixed structure of queries to isolate topic<br>• Use established Natural Language Processing similarity-based clustering techniques to identify deep similarities in language used about a topic. |

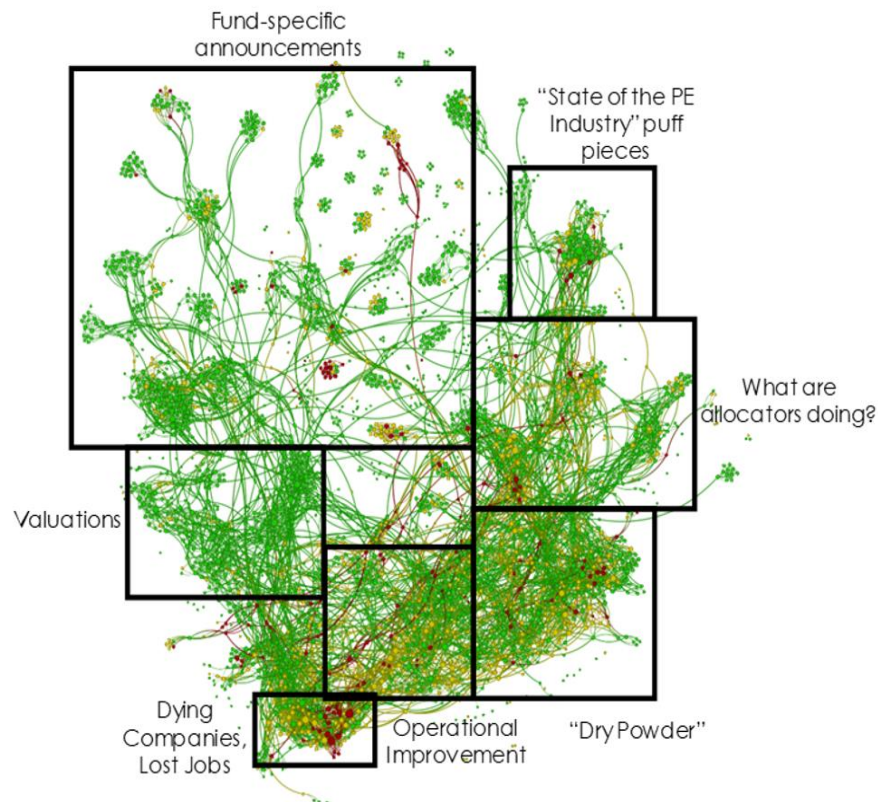| | | | | |
|---|---|---|---|---|
| **Measuring Narratives** | **Cohesion:** Internal influence of narrative on topic | **Attention:** External influence of narrative on topic | **Sentiment:** Positive or negative language | **Engagement:** non-Missionary social media forwarding |

| | |
|---|---|
| **Connecting Narratives to Markets** | • Derive direction predictive connections between states of Cohesion/Attention/Sentiment/Engagement (CASE) and market structure, money flows, trend formation and price movement more directly.<br>• Systematically generate views on securities, sectors and asset classes based on established CASE->Price transmission mechanisms. |

*Source: Second Foundation Partners, LLC*

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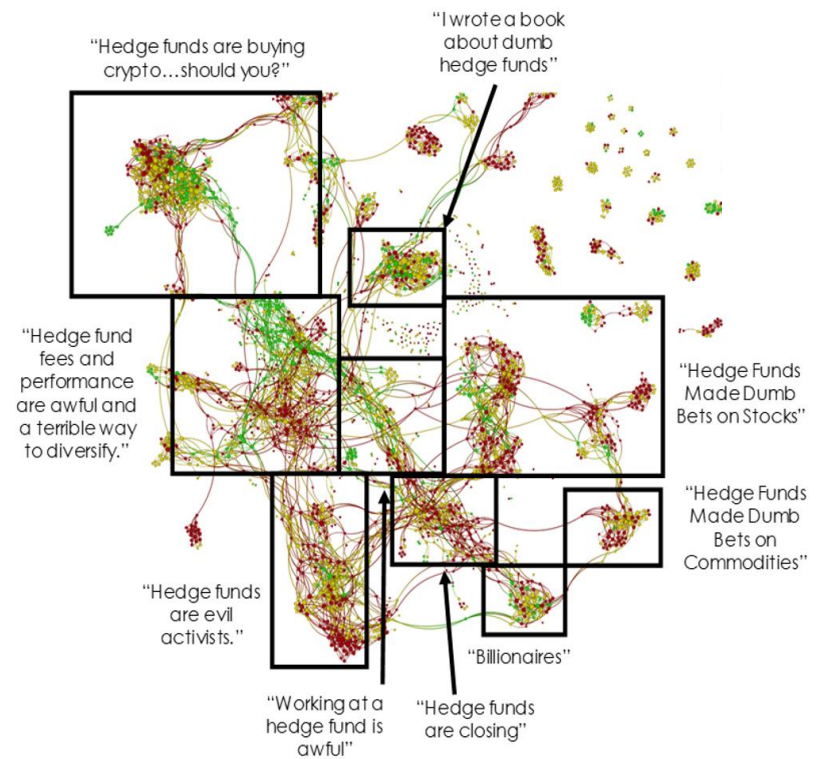
# We Go Beyond Sentiment and Social Media

*Sentiment and social media engagement are properties of each individual node. They are <u>conditioners</u> of narrative, not structural components of narrative.*

Private Equity Narrative

Hedge Fund Narrative



Private Equity Narrative labels:
- Fund-specific announcements
- "State of the PE Industry" puff pieces
- What are allocators doing?
- Valuations
- Dying Companies, Lost Jobs
- Operational Improvement
- "Dry Powder"
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Hedge Fund Narrative labels:
- "Hedge funds are buying crypto...should you?"
- "I wrote a book about dumb hedge funds"
- "Hedge fund fees and performance are awful and a terrible way to diversify."
- "Hedge Funds Made Dumb Bets on Stocks"
- "Hedge Funds Made Dumb Bets on Commodities"
- "Hedge funds are evil activists."
- "Working at a hedge fund is awful"
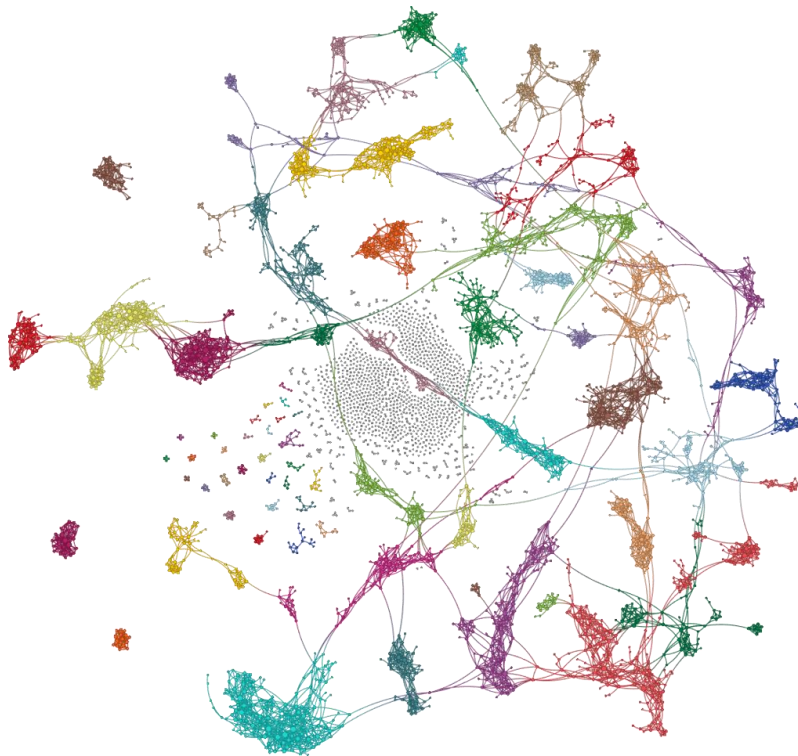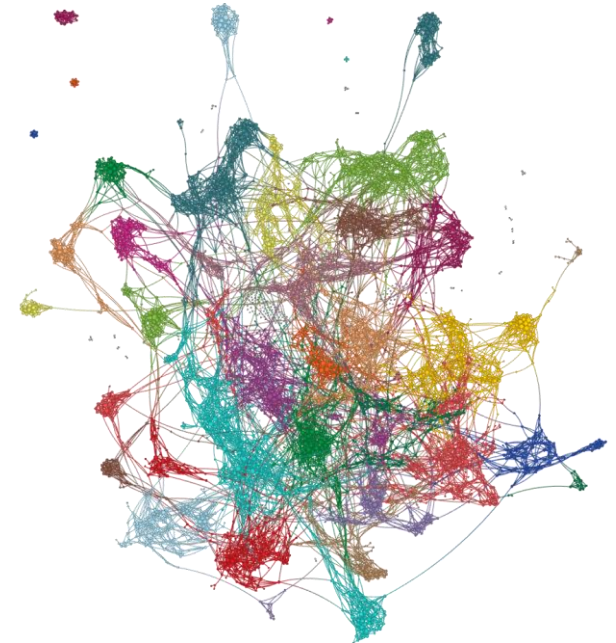- "Hedge funds are closing"
- "Billionaires"

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# Narrative Structure: Cohesion

*Cohesion is the connectedness and "center of gravity" of a single narrative, relative to itself over time*

Trade and Tariffs
Jan – Nov 2018

Trade and Tariffs
Dec 2018 – July 2019

vs.

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# Narrative Structure: Attention

*Attention is the connectedness and "center of gravity" of one narrative relative to all the other narratives in a media universe at a given point in time.*

Trade and Tariffs within Stock Market Media
August 2019

US Fiscal Policy within Stock Market Media
August 2019

vs.



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*Source: Quid, Inc., Second Foundation Partners, LLC*
*For Illustrative purposes only. Individual nodes represent articles in Quid, Inc. news database. Lines indicate cluster analysis-based proximity. Colors represent NLP-based cluster.*

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# ET Professional Monitors:

Putting Narrative Measures in Actionable Context

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# The Initial Approach to Monitors

We designed the initial set of monitors to provide **raw data** for each of our narrative measures on a particular topic of macro importance to financial markets



Narrative Cohesion
Trade and Tariffs

*Source: Second Foundation Partners, LLC*
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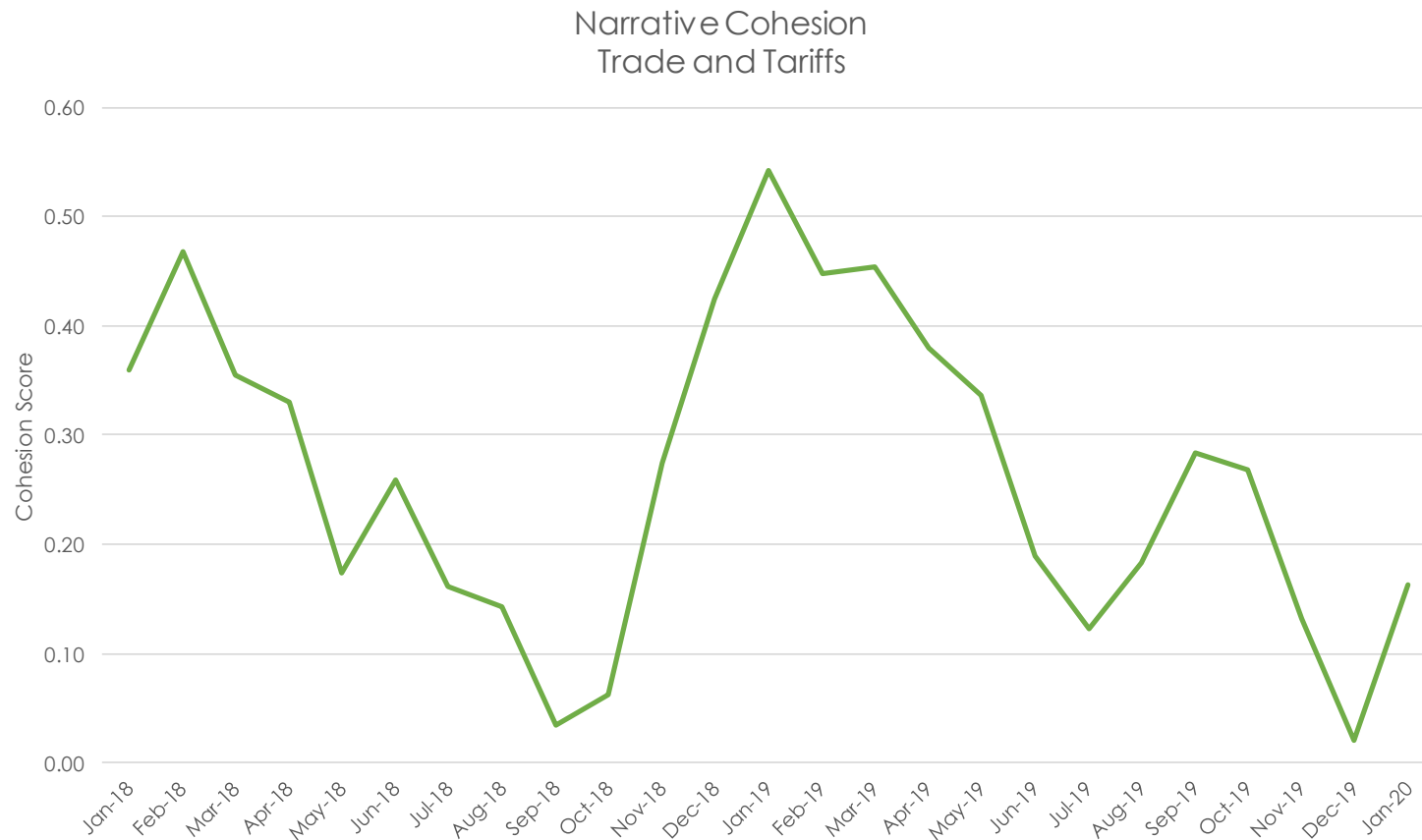
# The (Problematic) Initial Approach to Monitors

What we discovered is that, while useful as a data input for some processes (e.g. we use exactly this data for certain of our portfolio models), the context of the monitors was not as helpful as it could be for a number of reasons

- **Scaling**: What does a Cohesion score of 0.6 mean? Is it high? Is it low? Is it good? Is it bad?

- **Comparability**: Can raw scores be compared across topics and monitors? If so, how?

- **Interpretability / Meaning**: What does a cohesive or high attention "Inflation" narrative even mean? Is it a cohesive narrative that there *isn't* inflation? That there is? That there is hyperinflation in emerging economies?


**With these issues in mind, we fully redesigned our analytical tools and presentation with two clear goals: to make the conclusions of the monitors <u>interpretable</u> and <u>actionable</u>**

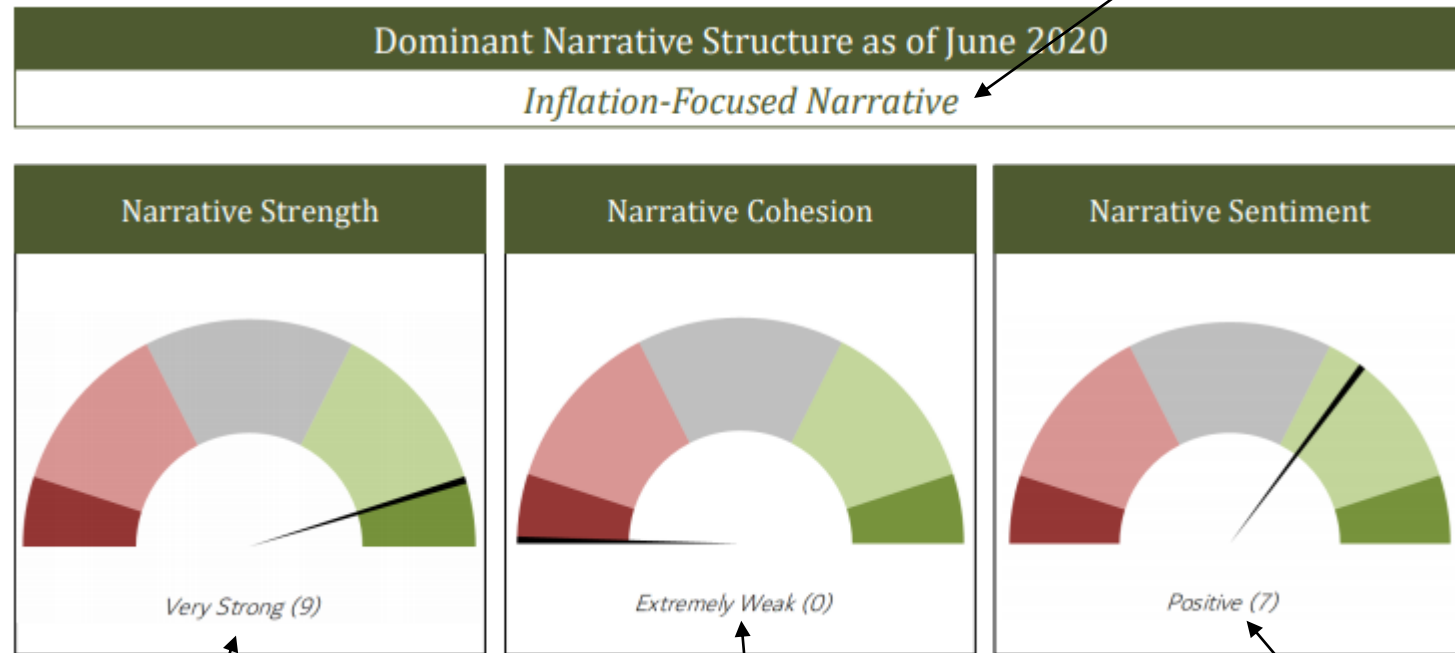# The New ET Professional Monitors Framework

*The framework we are rolling out starting **now** is a novel methodology which (1) defines narrative **states** of three main types of narratives, (2) normalizes their values to be interpretable and comparable and (3) identifies potentially relevant historical relationships between those states and asset class returns*

| Metanarrative | How **important** are stories and narrative in general and in context of (1) events, (2) fundamentals and (3) technical factors? | Example Categories: <br><br> How has COVID influenced macro efficacy? |
|---|---|---|
| **Macronarrative** | What are the specific **states** of various macroeconomic, political, social and behavioral narratives that we believe are likely to influence asset prices? | Example Categories: <br><br> Central Banks and Interest Rates <br> Global Trade <br> Fiscal Policy <br> Geopolitical Risk |
| **Micronarrative** | What are the specific **states** of narratives at the level of investable assets (e.g. sectors, countries, asset classes or securities) | Example Categories: <br><br> GICS Sectors <br> GTAA Asset Classes <br> Factors / Styles |

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*Source: Second Foundation Partners, LLC*
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# Interpreting the Report

Each report will identify a single dominant **state** of a narrative based on text data from the immediate prior month. This is based on the **Narrative Strength** measure.

## Dominant Narrative Structure as of June 2020

### *Inflation-Focused Narrative*

| Narrative Strength | Narrative Cohesion | Narrative Sentiment |
|---|---|---|
| *Very Strong (9)* | *Extremely Weak (0)* | *Positive (7)* |

**Narrative Strength** is normalized on a 0-10 scale and is a composite of Attention and Volume measures that seeks to capture the influence of the dominant narrative state – here "Inflation-Focused Narratives" on the Central Bank / Interest Rate narrative structure

**Narrative Cohesion** is similarly normalized on a 0-10 scale and is otherwise unchanged from prior versions. It measures the internally consistency of the language of the referenced narrative state.

**Narrative Sentiment** is also now normalized on a 0-10 scale and references the sentiment specific to the dominant narrative state for this period.

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*Source: Second Foundation Partners, LLC*
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# Interpreting the Report

Each report will show the historical regimes for the category as defined by the dominant narrative state in that period, which can also serve to provide historical analogs



Source: Second Foundation Partners, LLC
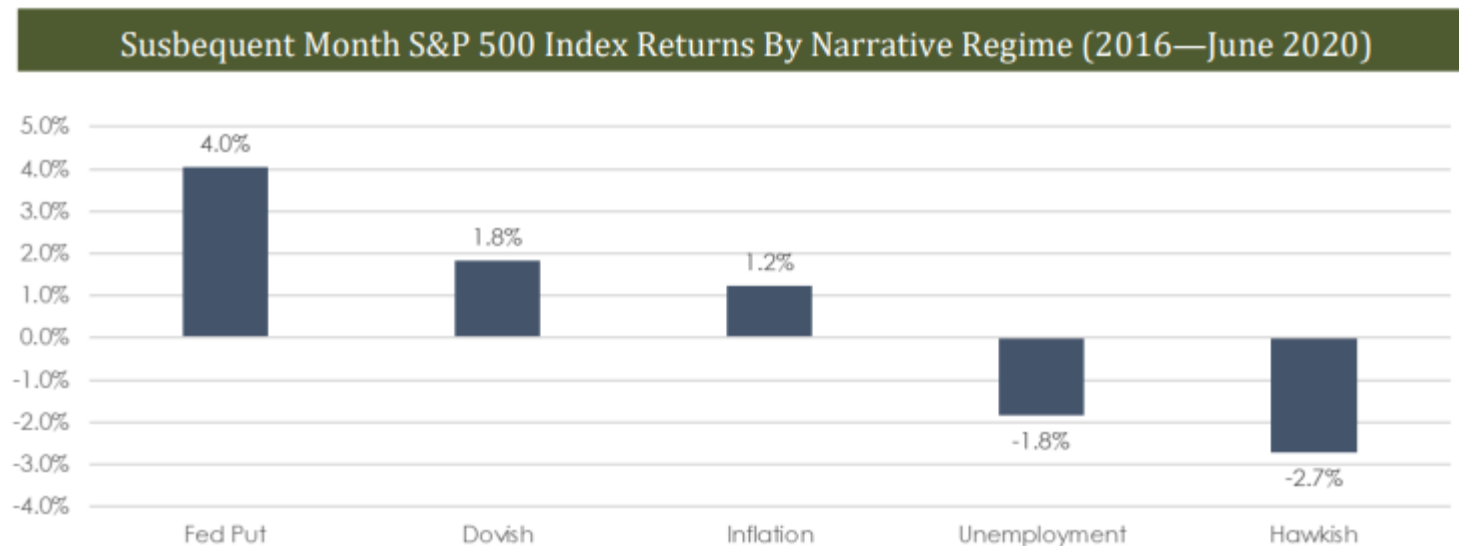For illustrative purposes only.
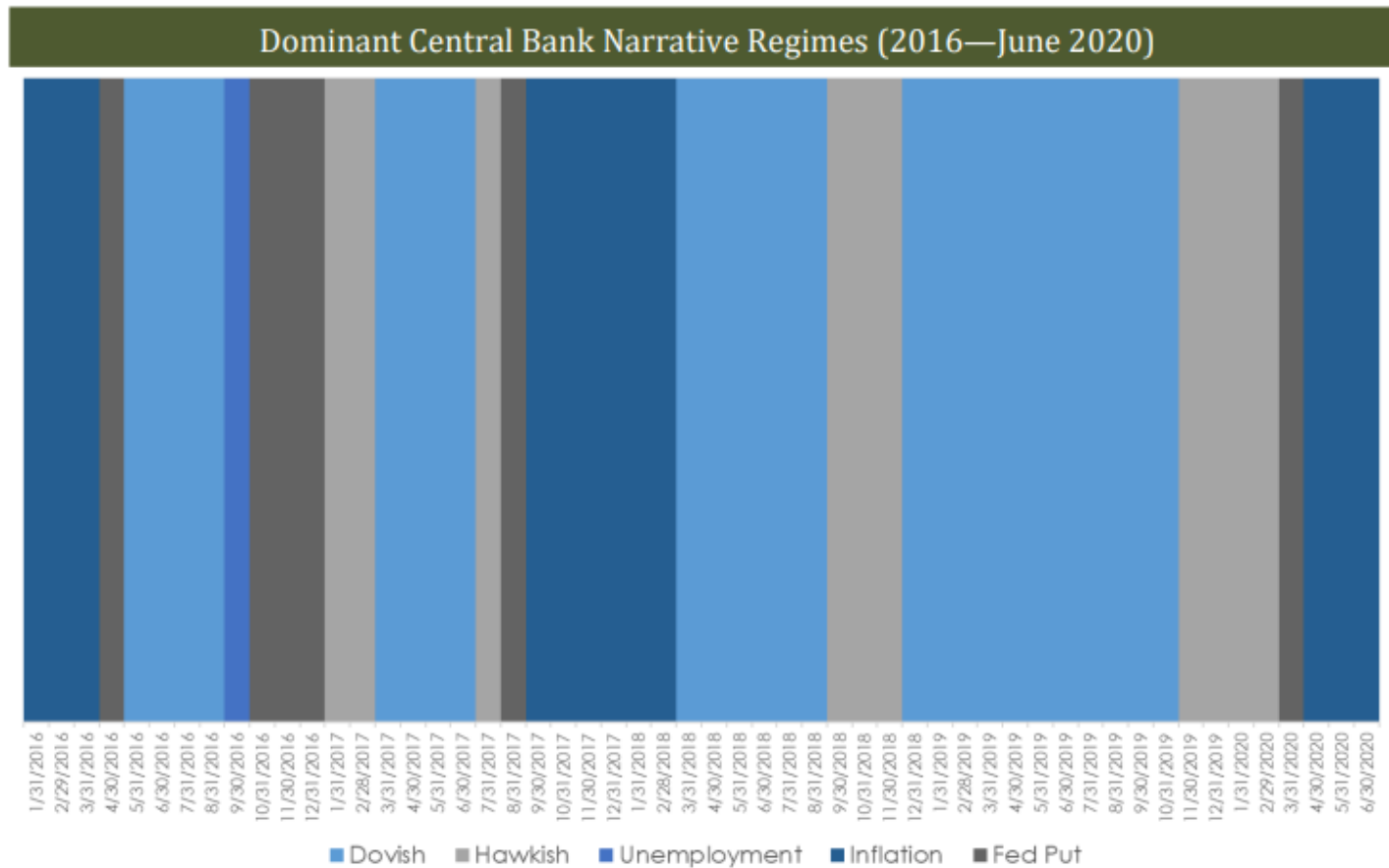
# Interpreting the Report

When we think it is relevant and reasonable to do so – which means when there is a sensible theoretical relationship between the regime and asset class behaviors – the report may include one or more historical relationships between *subsequent* asset class returns and prior period states

For example, the below table from our inaugural Central Bank report shows the historical relationship between each defined dominant narrative state and S&P 500 returns over the following month

**Susbequent Month S&P 500 Index Returns By Narrative Regime (2016—June 2020)**

| Fed Put | Dovish | Inflation | Unemployment | Hawkish |
|---------|--------|-----------|--------------|---------|
| 4.0% | 1.8% | 1.2% | -1.8% | -2.7% |

*Source: Second Foundation Partners, LLC*
*For illustrative purposes only. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.*

# Interpreting the Report

While most of the report is defined in terms of the identified dominant state, it also provides the corresponding normalized measures for each of the other regime types

In this case, our models indicated that an Unemployment-Focused narrative structure was the next closest to being the dominant regime in this environment

| Narrative Structure Measures by Archetype | | | |
|---|---|---|---|
| | **Strength** | **Cohesion** | **Sentiment** |
| Easing / Dovish Policy | Average (4) | Extremely Weak (0) | Very Positive (9) |
| Tightening / Hawkish Policy | Weak (3) | Average (4) | Very Positive (8) |
| Central Bank 'Put' | Weak (2) | Extremely Strong (10) | Positive (7) |
| Inflation Focus | Very Strong (9) | Extremely Weak (0) | Positive (7) |
| Unemployment Focus | Average (6) | Very Strong (9) | Average (5) |

*Source: Second Foundation Partners, LLC*
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