

Using unstructured data for financial market applications

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How are alternative data useful?

- **A few examples:**

- Measuring consumer behavior
Company earnings
- Uncovering relations between companies
Competition strength
- Understanding retail investor coordination (social)
Retail flow
- Detecting and measuring emerging themes / narratives
Attention pricing

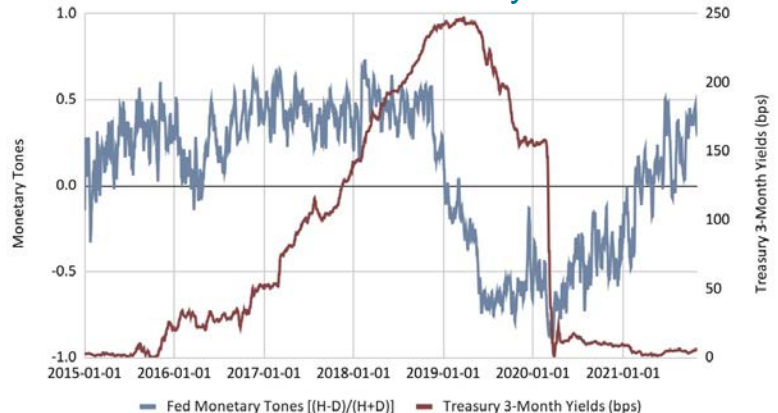
Measuring Narratives

- **What are the types of narratives?**
 - Priced assets
 - Macroeconomic variables
 - Intangibles
- **How to quantify narratives?**
 - Media coverage
- **Implications for price predictability**
- **Attention pricing**
 - Investors price securities with limited attention

Monetary Policy – What’s the problem?

- **What’s the problem looking at official communication?**
 - NLP / communication feedback increases opacity
 - Inter-meeting periods
- **Solution: Use media coverage to understand monetary policy**
 - Aggregate views/interpretations of official communication
 - Ongoing daily indicators

Fed Monetary Tones Seem to Lead 3-Month Treasury Yields

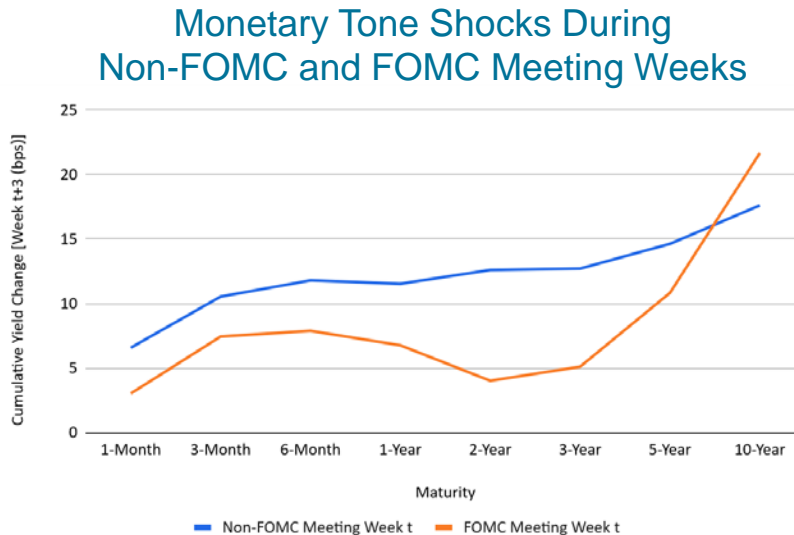


Source: “Central Bank Monetary Tones and Yields” (Journal of Fixed Income, forthcoming). The sample spans January 2015 through October 2021.

Monetary Policy – Implications for Yields

- **Can monetary tone predict changes in yields?**

- Yield reaction to monetary tone on non-FOMC meeting weeks tends to be more pronounced along the term structure



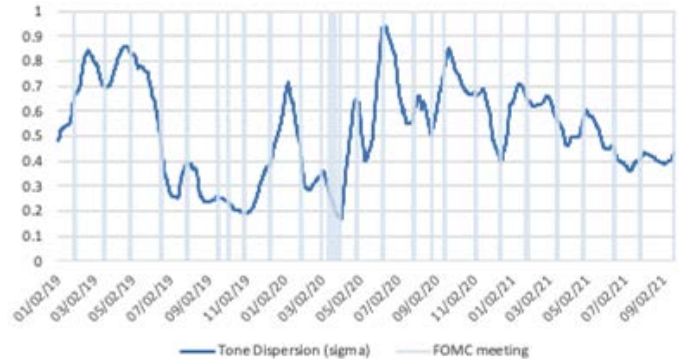
Source: “Central Bank Monetary Tones and Yields” (Journal of Fixed Income, forthcoming). The sample spans January 2015 through October 2021.

Monetary Policy – Individual Members

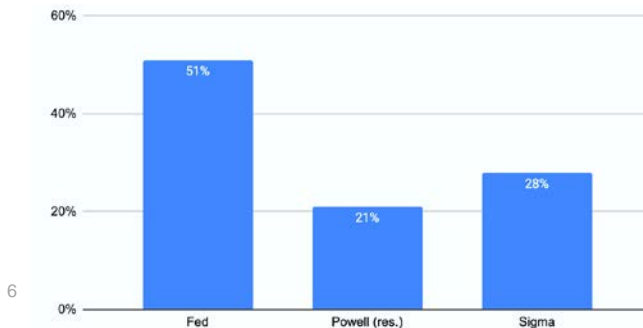
• Measure individual member tone?

- Voting FOMC members display consensus during the height of the pandemic (Spring 2020)
- Dispersion increased in the fall and currently consensus is formed among the members

Policy Dispersion Among Fed Officials



The Relative Impact of Monetary Tones

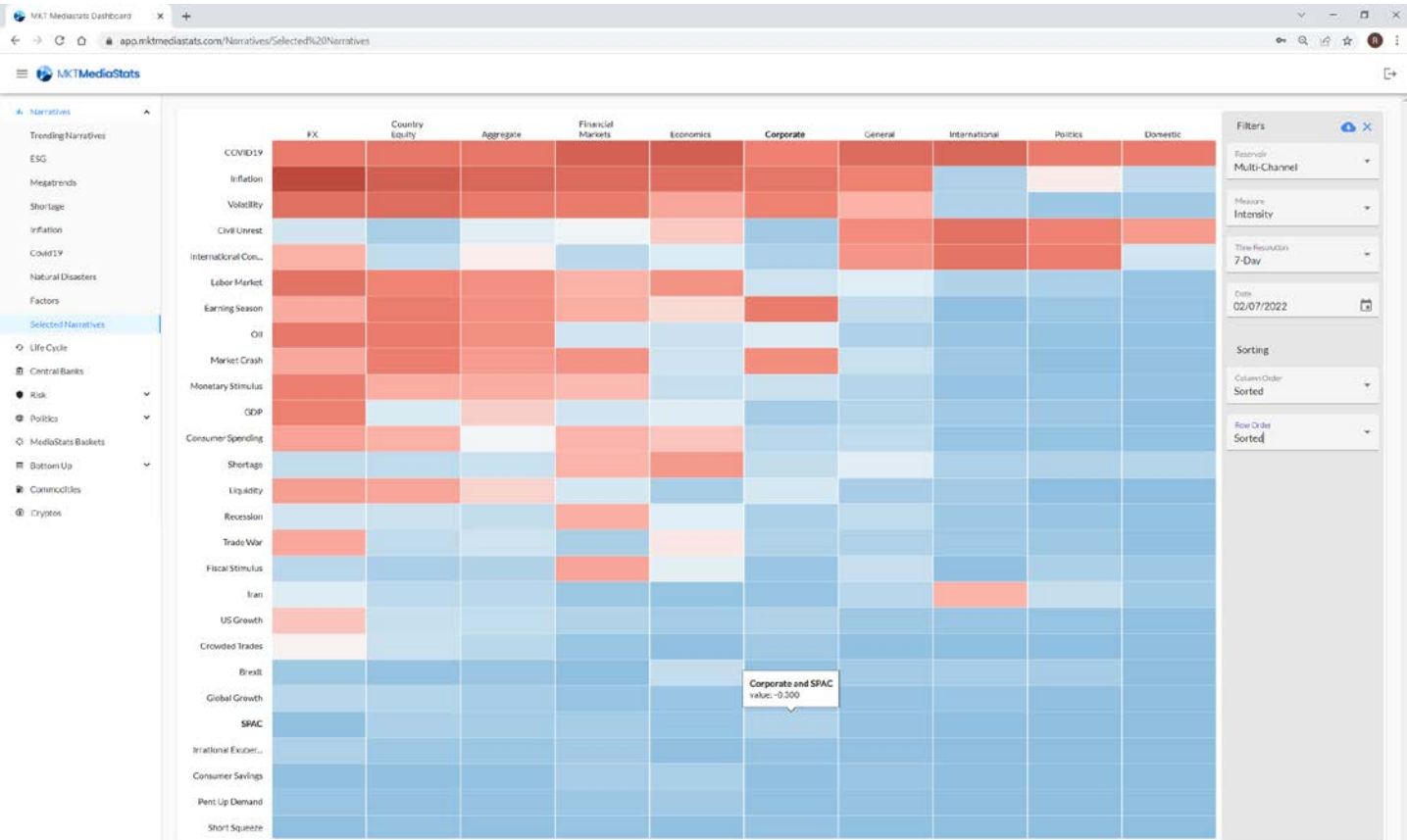


• Predictability of short-term interest rates:

- Average Fed tone (51%)
- Powell independent voice (21%)
- Sigma (28%)

The Narratives Dashboard

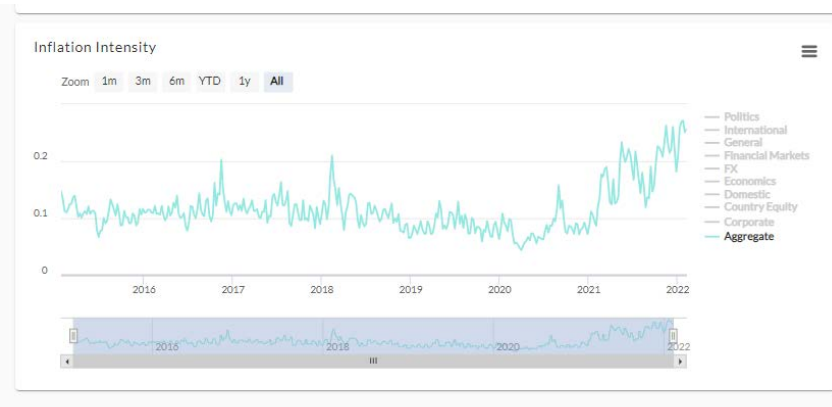
- Select, pre-determined narratives



Themes in the Time Series

- **Quantifying narratives in the time series is key**

- Understanding information diffusion and narrative life cycle
- Proxy for investor attention
- Estimation of asset price exposures



Attention Pricing – Inflation Index

- **How to build an inflation index?**

- Multiple challenges

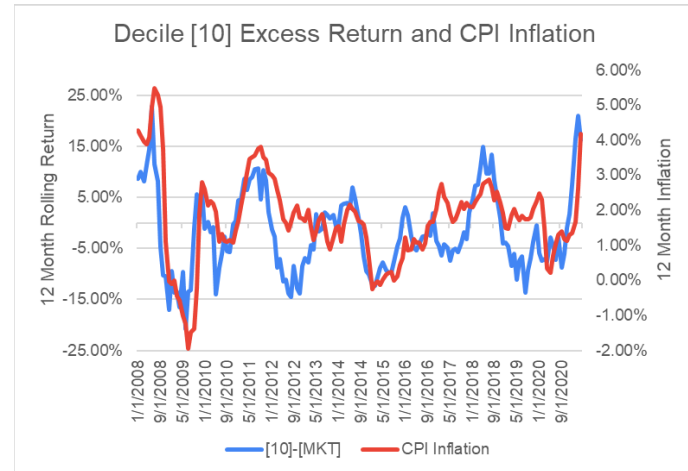
- Inflation measurement; investor expectation
- Which stocks are exposed?

- **Solution:**

- Inflation attention

- Asset prices are inflation-informative when inflation-attention is high
- Use inflation attention as interaction term to estimate exposures

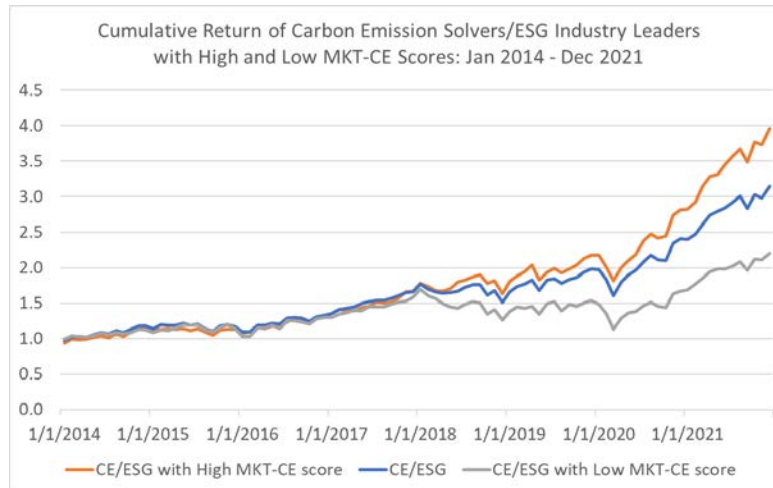
- Attention pricing models



Attention Pricing – Market-based Measure of ESG

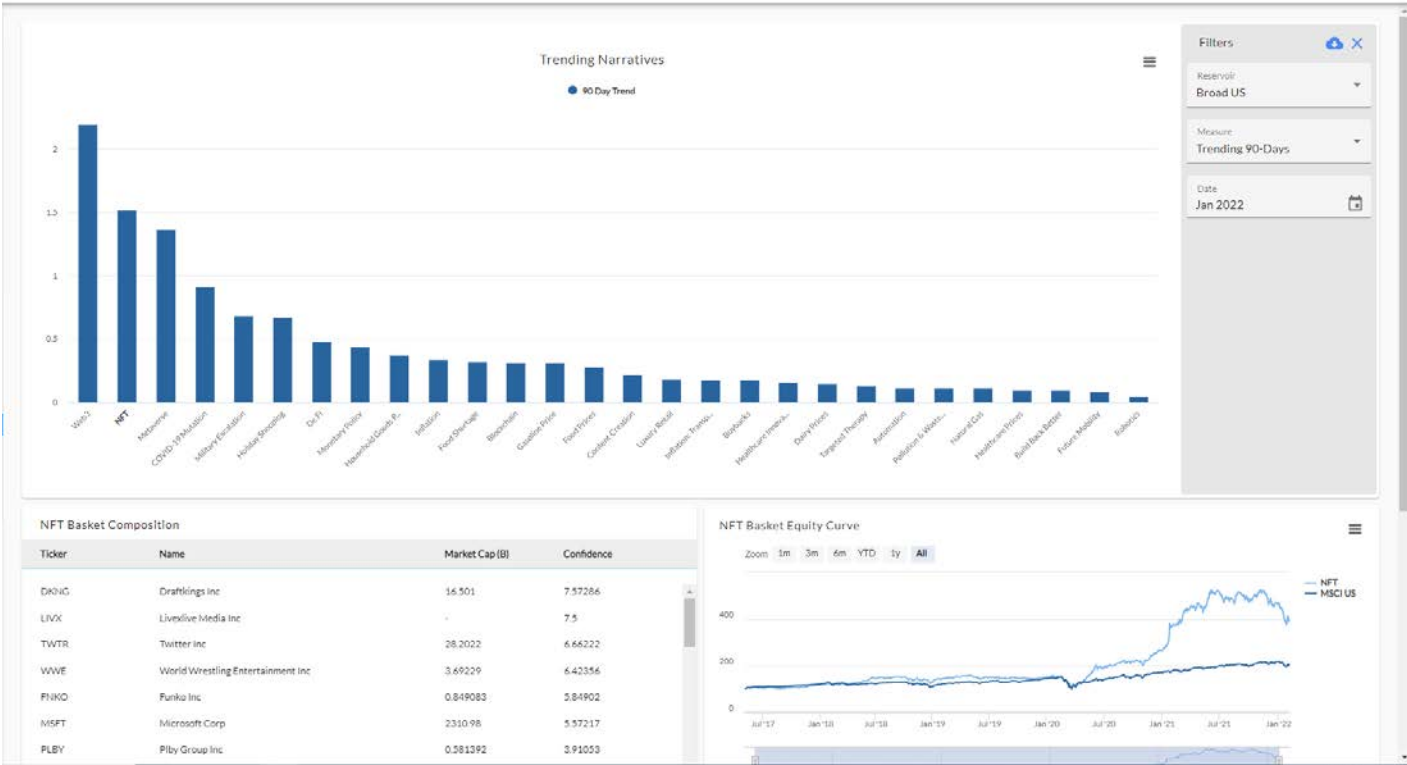
- **How to better identify climate friendly firms?**

- Estimate price movements during periods of high attention to climate
 - Rolling regressions, per stock
 - Identify market participant perception of climate friendly firms
- Rank stocks in the cross-section and build basket portfolios



Creating Thematic Baskets with Alternative Data

• Systematic approach to basket formation



Final Remarks

- **Alternative data can be useful if used correctly**
- **Use case: measuring narratives**
 - Intangibles, low frequency
 - Security exposures
 - Attention pricing
 - Baskets
- **Plenty of more opportunities**