NLP and the Economy

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Relevance of the Projects

1. Burgeoning literature that analyses text to assess the impact of central bank communication and news on financial returns and macroeconomic variables (see Gentzkow, Kelly, and Taddy 2019).

2. Most of the economic literature used to rely on dictonary-methods and word counts (e.g., Tetlock 2007; Loughran and McDonald 2011).

3. These studies constitute an excellent example of the progress achieved by economic research in the application of text mining tools.

Sentiment and Uncertainty about Regulation

Strengths

1. Massive and comprehensive dataset of US news articles.
2. Sophisticated identification of relevant news based on dependency parsing from Unified Agenda reports.
3. Validation of results across three dictionaries (LM, GI and LSD).

Room for Improvement and Extension

1. Refining sentiment and uncertainty measures:
   - $\Rightarrow$ Synthetic index from PCA/factor analysis of different scores.
   - $\Rightarrow$ Supervised classification à la Shapiro, Sudhof, and Wilson (2020).
   - $\Rightarrow$ Draw from Moreno-Perez and Minozzo to construct uncertainty dictionary based on word embedding.
2. Improving categorisation of news articles:
   - $\Rightarrow$ Topic modelling to account for articles covering multiple regulation categories.
3. Going high-frequency:
   - $\Rightarrow$ Does regulatory sentiment and uncertainty affect financial returns?

Firm-Level Risk Exposures and Stock Returns

Strengths

1. Detailed textual information from *Risk Factors* of 10-K filings.
2. Complementary strength of dictionary methods and supervised learning.
3. Inductive construction of MNIR-based exposure categories.

Room for Improvement and Extension

1. Comparison of dictionaries and supervised tools:
   - ⇒ Is the comparison of the predictive performance of dictionaries and supervised tools a "fair" one?
2. Reproducibility of interplay between human input and automated methods:
   - ⇒ How generalisable/tailor-made is this methodological approach?
3. Lesson drawing:
   - ⇒ Would emphasise more the insights we gain on the heterogenous impact of different policy shocks on equity returns.

Monetary Policy Uncertainty in Mexico

Strengths

1. Central bank meeting minutes relatively understudied in the literature.
2. Complementary strengths of different unsupervised approaches.
3. Clever and innovative use of word embedding to create uncertainty dictionary.

Room for Improvement and Extension

1. Topic model selection:
   - $\Rightarrow$ Why 20 topics? Are results robust to different number of topics?
   - $\Rightarrow$ Take into account performance metrics, such as exclusivity and semantic coherence.
2. Pre-processing:
   - $\Rightarrow$ Different pre-processing decisions across methods. Can you explain rationale?
3. Going high-frequency:
   - $\Rightarrow$ Would expect significant impact of meeting minutes on asset prices and investor expectations.

Central Banks' Sentiment and Spillover Effects

Strengths

1. Policy diffusion phenomena relatively understudied in the central bank communication literature.
2. Innovative combination of text-as-data methods and network analysis.
3. Evidence of effects of sentiment on asset prices in a comparative perspective.

Room for Improvement and Extension

1. Off-the-shelf dictionary:
   - ⇒ Draw from Sinclair and Xie and verify that results hold across dictionaries.
   - ⇒ Loughran and McDonald (2011) designed for 10-Ks and highly unbalanced.
2. Time-Series Analysis:
   - ⇒ Before network analysis, it would be nice to see IRFs of different central banks' sentiment scores used in the same regression framework.
3. Interpretation of the Results:
   - ⇒ Are spillover effects result of policy diffusion or epiphenomenal, i.e. result of synchronous business cycles?

Thank you for your attention!

References I

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