Leveraging Natural Language Processing (NLP) To Answer Economic Questions

Natural language processing (NLP) is undergoing a revolution as big data and large-language models transform the capacity to represent and analyse textual information and extra signals and meaning.

This conference aims to bring together recent research using these approaches in economics.

14h   Opening remarks

14h05   Opening speech -"Future Challenges for Text-as-Data in Economics"

          Professor Stephen Hansen, University College London

Session 1 – Using NLP to improve forecasting and understand narratives

14h40   Making text count: Economic forecasting using newspaper text (Kalamara, Turrell, Redl, George, Kapadia, 2022)

This paper examines several ways to extract timely economic signals from newspaper text and shows that such information can materially improve forecasts of macroeconomic variables including GDP, inflation and unemployment.

15h00   Risky news and credit market sentiment (Labonne and Thorsrud, BI Norwegian Business School)

The nonlinear nexus between financial conditions indicators and the conditional distribution of GDP growth has recently been challenged. This paper shows how to use textual economic news to construct an alternative indicator based on word embeddings.

15h20   The impact of monetary surprises on exchange rates: insights from a textual analysis approach on a panel of countries (Bricongne and Marolleau, Banque de France)

This paper analyses the impact of monetary policy surprises on the exchange rates. A textual analysis method is applied on press articles and online briefing notes to create a panel database of monetary surprises on developed and emerging countries.

15h40 Mining the Gap: Extracting Firms' Inflation Expectations From Earnings Calls, (Albrizio, Dizioli and Vitale Simon, 2023, IMF)

This paper constructs a new cross-country index of firms' inflation expectations from earnings call transcripts. This shows departures from a rational framework in firms' inflation expectations and that firms' attention to the central enhances monetary policy effectiveness.

16h00   Short break

Session 2 – Using NLP to explore different concepts

16h10   Assessing Economic Risks Around Macroeconomic Forecasts: A mixture of fined-tuned BERT and economic experts (Betin, Chalaux, Dex and Turner, OECD, forthcoming)
This paper uses information from past editions of the OECD Economic Outlook since the 1960s to construct an indicator of economic risk.

16h30   New dimensions of regulatory complexity and their economic cost. An analysis using text mining (De Lucio and Mora-Sanguinetti, Banco de Espana, 2021)

This paper constructs a new database of Regulatory Complexity in Spain extracting information from 8,171 regulations for all the Spanish autonomous regions. It analyses the relationship between these new indicators and productivity and judicial efficacy.

16h50   Using Computational Linguistics to Identify Competitors and Competitive Interactions (Phillips, Darmouth)

This presentation will draw on NLP to calculate firm pair-by-pair product similarity scores to build a spatial, text-based network industry classification to capture horizontal and vertical industry connections and competition among firms and explore the implications for competition policy.

17h10   Using NLP to detect data/AI hiring intensive jobs and firms (Schmidt, Pilgrim and Mourougane, forthcoming)

This paper identifies data-and AI-related skills in online job advertisements on the Lightcast platform and combines this with firm-level data to explore the characteristics and performance of data-intensive firms.

17h30   Closing remarks