

# Measuring Brexit uncertainty and understanding the causes



UNIVERSITY OF  
BIRMINGHAM

## EXECUTIVE SUMMARY

- We present innovative real-time indicators of Brexit uncertainty based on UK newspaper coverage, which allow for disentangling the COVID effects.
- The indices provide a constantly evolving picture of how uncertainty is changing and where the uncertainty originates, by decomposing uncertainty into different policy areas (such as Northern Ireland, supply chain issues, and energy & climate).
- The pandemic accounted for around 50% of the overall uncertainty index post 2020, and this magnification effect varies across policy areas, with the most pronounced effect related to employment (COVID effect accounting for 77.9%), government spending (74.3%), and supply chains (69%).
- These indices closely match UK firms' concerns as reported by the Bank of England's Decision Maker Panel (DMP) survey data.

## Policy recommendations

Using our real-time Brexit indicators:

1. Provides insights into how two major shocks to the UK economy, Brexit and the pandemic, are being perceived in the UK news and on Twitter.
2. Enables policymakers to quantify and compare the impact of Brexit uncertainty on different areas of the economy.
3. Helps policymakers to understand the role aggregate uncertainty plays in the real economy, such as whether the relatively weak performance of the UK economy relative to other EU states is a result of the pandemic, Brexit, or some combination of the two.
4. Allows policymakers to apply these techniques quickly and efficiently to future policy changes or economic shocks to understand how uncertainty

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from these events impact different aspects of the economy. For example, how uncertainty from the Ukraine crisis has impacted energy markets and the global supply chain.

## About the research

The project constructs novel measures of Brexit-related uncertainty based on textual analysis and unsupervised machine learning methods (see [Chung et al., 2022](#)). Our Brexit Uncertainty index (BUI) starts in 2013 and is consistent and comparable before, during, and after the EU referendum (see Figure 1). We construct these measures using 11 main UK newspapers as well as Twitter data.

We rely on two techniques from computational linguistics, namely the Word2Vec model and the Latent Dirichlet allocation (LDA) model, for automatically identifying search words and decomposing the content of articles to obtain the indices.

## Disentangling Brexit from COVID uncertainty

As the pandemic also generated a significant degree of uncertainty for the UK economy, we disentangle the COVID effects by calculating a lower bound BUI that excludes all news published after 2020 that contains COVID-related words. Based on this measure, the pandemic accounted for around half of the overall uncertainty index during this period.

Our index is highly correlated with the Bank of England's Decision Maker Panel (DMP) survey in which firms answer the question whether Brexit is the largest source of uncertainty for their business. Post-2020, the lower bound BUI (i.e., BUI excluding COVID effects) and DMP series move together very closely with a correlation coefficient of 0.9 DMP series for the same period).

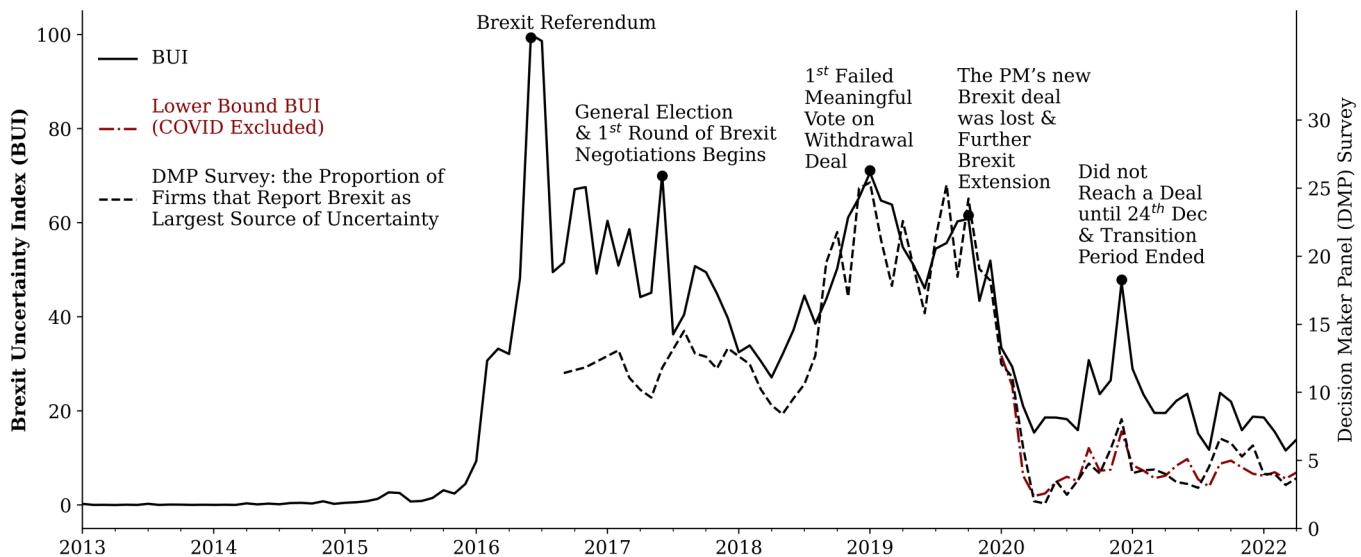


Figure 1: Brexit Uncertainty Index (BUI)

These findings suggest that our lower bound BUI successfully disentangles the uncertainty due to Brexit and the uncertainty from the pandemic. Our index is also highly correlated with a Twitter-based aggregate BUI.

## Identifying the effect of the pandemic across different policy areas

We also construct time-varying topic-specific BUIs, such as for the topics of Northern Ireland, supply chain issues, energy and climate, employment, macroeconomy, trade policy, fishing, and government spending.

Brexit uncertainty varies significantly across policy areas. Overall, we find that Northern Ireland and trade policy-related Brexit uncertainty are the main channels. Later, the currency (Sterling depreciation) and trade policy topics led to some of the greatest uncertainty during the referendum period (2016:2-2017:5). Post-referendum the Northern Ireland issue has been the largest source of uncertainty (which encompasses issues related to trade).

As with the overall BUI we can strip out the COVID effect. We observe that the most pronounced magnification effect related to employment (COVID effect accounting for 77.9%), government spending and budget (74.3%), and supply chains (69%). The role of COVID on energy and climate BUI is also apparent (53.3 %), reflecting the recent energy crisis exacerbated by both events, whereas Fishing and the Northern Ireland topics are the least affected.

## Conclusion

Six years on from the June 16th EU referendum, and over a year since the implementation of the EU-UK Trade and Cooperation Agreement (TCA), the term “Brexit” still features prominently in the news. Despite widespread acknowledgment that uncertainty is harmful for businesses and individuals, there have been little research that attempts to quantify the degree of uncertainty. **Our work enables policy makers to quantify the extent to which different channels contribute to the overall level of uncertainty being experienced in the UK before, during and after the Brexit referendum, as well as disentangling the effect of the pandemic by policy areas of interest.**

## More info

- [Project webpage](#)
- [CEPR Discussion Paper DP17410](#)

## Contact

[Wanyu Chung](#), Associate Professor of Economics, University of Birmingham and Research Affiliate, CEPR. Email: [w.chung@bham.ac.uk](mailto:w.chung@bham.ac.uk)

[Duiyi Dai](#), PhD candidate, University of Birmingham. Email: [dxd048@student.bham.ac.uk](mailto:dxd048@student.bham.ac.uk)

[Robert J R Elliott](#), Professor of Economics, University of Birmingham. Email: [r.j.elliott@bham.ac.uk](mailto:r.j.elliott@bham.ac.uk)