Does It Fit? Tweeting on Monetary Policy and Central Bank Communication*



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Source: Gorodnichenko, Y., Pha, T. & Talavera, O. (2021). "'Liked', 'Shared', 'Commented': Central Bank Communication on Facebook and Twitter," Discussion Papers 21-05, Department of Economics, University of Birmingham.

Abstract

- This note proposes an index to measure the relationship between **monetary policy communication** and **market sentiment**, where **market sentiment** is proxied by a **Twitter-based metric**: the **Central Bank Surprise Index.**
- A **higher similarity** between **central bank announcements** and **Twitter-based market sentiment** implies **fewer surprises**, i.e. more consistency between monetary policy messages and market reactions.
- This measure is computed for **three major central banks**: the **Federal Reserve**, the **European Central Bank** and the **Bank of England**.
- Among other things, we look at three famous announcements:
  a) **Mario Draghi's conference** call on **July 26, 2012**
  b) **Mario Draghi's conference** call on **June 27, 2017**
  c) the "**Economic Prospects for the Long Run**" speech held by Ben S. Bernanke on **May 18, 2013**.
- The first two cases are known for being a **source of surprises**.
- Consistently we observed **very low similarity scores** in the cases **a)** and **b).**
- In the **third case** we observed a **high similarity score**.

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Data Collection

- We focus on official communication about monetary policy committee decisions from the three most important central banks:
  - Bank of England
  - European Central Bank
  - Federal Reserve.
- From their official websites, we retrieved transcripts of meetings in which a monetary policy decision was announced.
- Our sample comprised:
  1) 143 transcripts of Bank of England meetings from 2006 to December 2018
  2) 230 transcripts of European Central Bank meetings from 1998 to December 2018
  3) 54 transcripts of Federal Reserve meetings from 2012 to December 2018

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- Our objective is to **transform daily tweets** about the **monetary policy decisions** of the Bank of England, the European Central Bank and the Federal Reserve Bank into a **numerical measure** of **similarity**.
- This indicator reflects the **distance** between **market expectations** and the **information** provided in **central bank transcripts**.

Bank	Keywords	Number of tweets	Timeframe
Bank of England[1]	@bankofengland, #bankofengland, #boe,	325,462	Since 2011
European Central Bank	@ecb, #draghi, #ecb,	609,447	Since 2011
Federal Reserve	@federalreserve, #Yellen,	952,806	Since 2011

Source: Gorodnichenko, Y., Pha, T. & Talavera, O. (2021). "'Liked', 'Shared', 'Commented': Central Bank Communication on Facebook and Twitter," Discussion Papers 21-05, Department of Economics, University of Birmingham.

The Central Bank Surprise Index

- As we are interested in how the similarity between **bank conference calls** and the **market's response** after the call influences market prices.
- We gathered the **tweets published** in the **interval between 48 hours before** and **48 hours after a speech**.
- The tweets were **split** into **12-hour segments** around the speech.
- The intervals are illustrated in the following Table.
- Thus, we have **eight groups of tweets** to measure **against** the **content of the speeches.**

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Tweet Intervals (delta hours from the speech)		
[-48, -36)	a_lag_4836	48 to 36 hours before the speech
[-36, -24)	b_lag_3624	36 to 24 hours before the speech
[-24, -12)	c_lag_2412	24 to 12 hours before the speech
[-12, 0)	d_lag_1200	Up to 12 hours before the speech
[0, +12)	e_fwd_0012	Up to 12 hours after the speech
[+12, +24)	f_fwd_1224	12 to 24 hours after the speech
[+24, +36)	g_fwd_2436	24 to 36 hours after the speech
[+36, +24)	h_fwd_3648	36 to 48 hours after the speech

Source: Gorodnichenko, Y., Pha, T. & Talavera, O. (2021). "'Liked', 'Shared', 'Commented': Central Bank Communication on Facebook and Twitter," Discussion Papers 21-05, Department of Economics, University of Birmingham.

The Central Bank Surprise Index (cont'd)

- We then **measure similarity between documents** as the **cosine** of the **angle between** the **two corresponding vectors**.
- We observe a rather **stable similarity index** in the case of the **Federal Reserve Bank** over the period 2012-2017.
- On the other hand, a **slight decrease** can be observed for the Bank of England and the European Central Bank.
- If we narrow our analysis to the post-2012 period for the ECB and the **Bank of England**, we find a more stable index.

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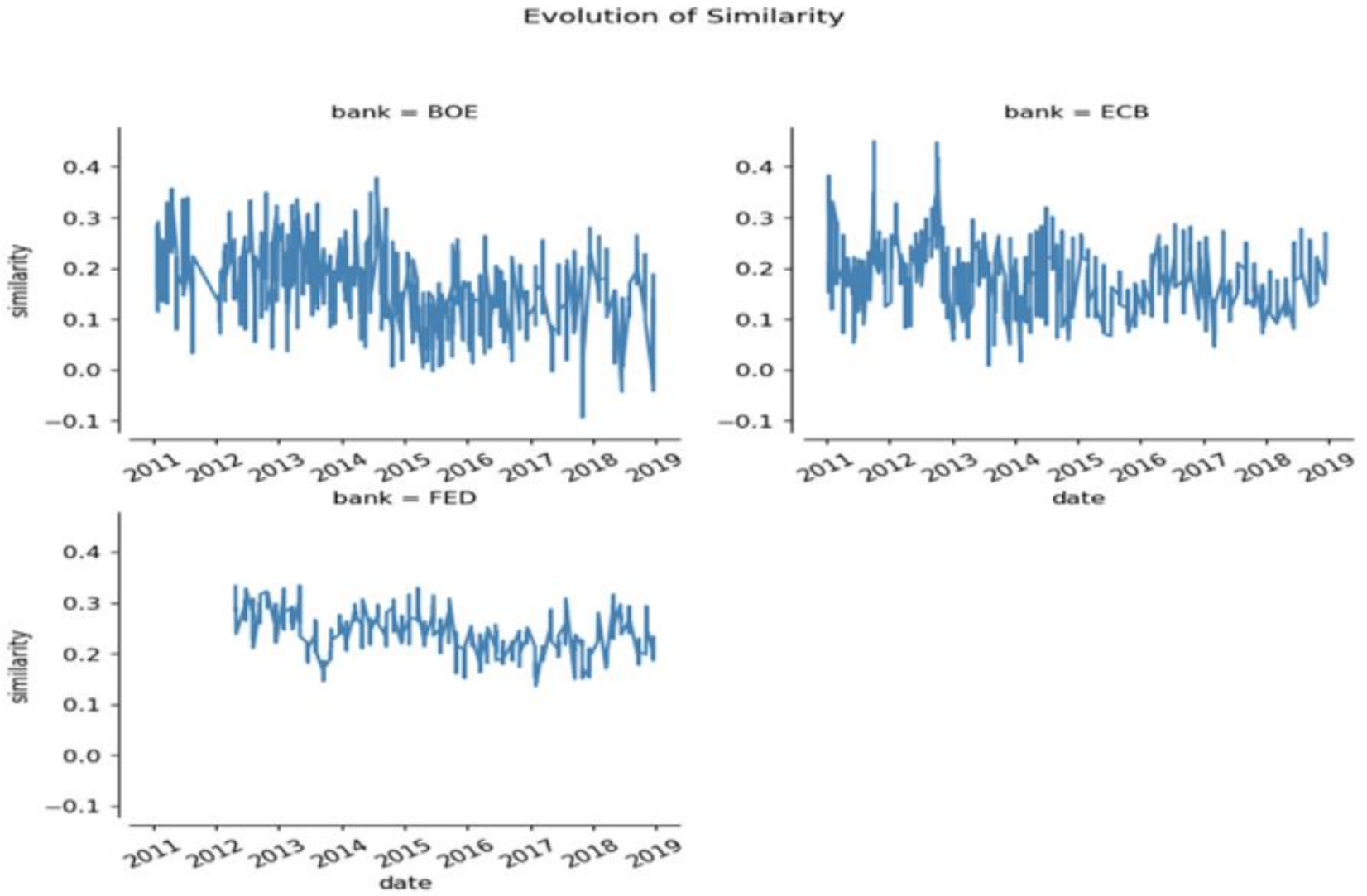
Evolution of the Central Bank Surprise Index Over Time



Source: Gorodnichenko, Y., Pha, T. & Talavera, O. (2021). "'Liked', 'Shared', 'Commented': Central Bank Communication on Facebook and Twitter," Discussion Papers 21-05, Department of Economics, University of Birmingham.

The Central Bank Surprise Index (cont'd)

- The values of the measure of similarity appear to be **quite different** for the Bank of England, the Federal Reserve Bank and the ECB.
- In the case of the **ECB** in particular, we note **lower similarity index** in the **days before** a meeting and **higher** in the days **after a meeting.**
- This suggests that although markets find it **more difficult to forecast** the ECB's policy directions **prior to the announcement**, especially **on the day of the announcement**, a **closer consensus** is **reached afterwards**.
- The **pattern is similar** for the **Bank of England**, although the **differences before** and **after the announcement** are not as stark as in the case of the ECB.
- Finally, **little difference** is observed for the **Federal Reserve**.

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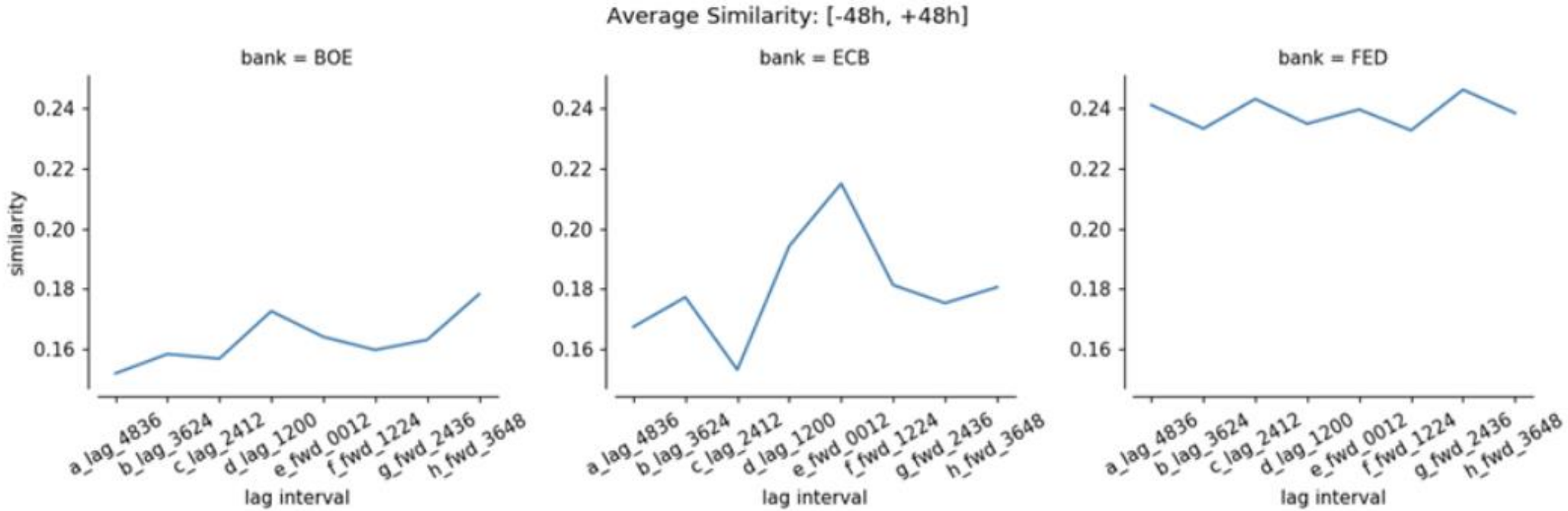

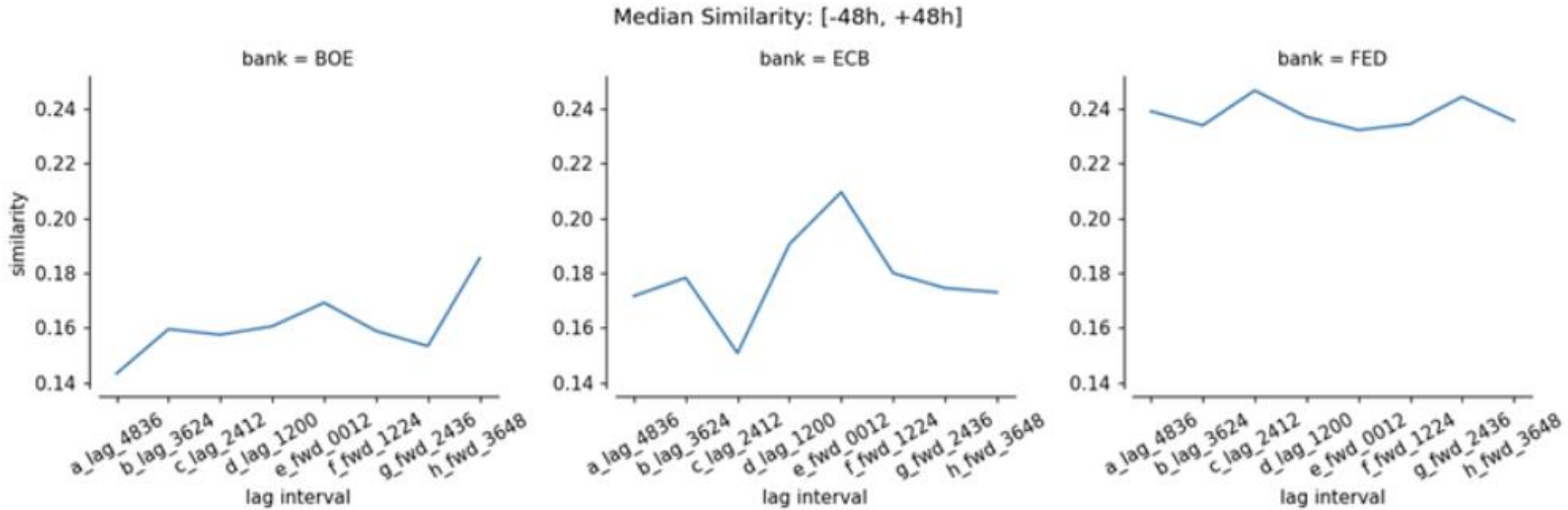

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