

## Tweetonomics: How do central bank communicate their policy decisions and why does it matter?

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### Introduction

Over the past three decades, we have seen a radical transformation in the way central banks communicate to the public (Issing, 2005; Assenmacher et al., 2021). Previously characterized by silence and secrecy, central banks have nowadays embraced transparency, and communication has become a crucial aspect of the monetary policy toolkit (Bini Smaghi, 2007; Blinder et al., 2008). Extensive research has shown that communication can enhance monetary policy effectiveness by creating complementary news to policy actions and reducing public uncertainty. Effective communication increases monetary policy predictability, clarifies policy objectives and strategies, and enables a better understanding of policy responses to new information (Bernanke, 2004). By articulating its policy objectives, the central bank can shape the expectations of economic agents, thereby informing their decisions on investment, savings, and wage negotiation (Woodford, 2005). This, in turn, has been shown to have a significant impact on the behaviour of financial market participants, around the policy announcement (Blinder et al., 2008; Bennani & Romelli, 2023; Masciandaro et al., 2023b).

However, it is not only financial markets or economists who need to understand central bank communication; the general public is also a key audience. The way the public perceives and comprehends monetary policy can significantly influence their financial behaviour, and in turn, the economy's overall performance (Binder, 2017). For instance, if people understand the central bank's actions, it might influence their decisions to spend or save, which directly impacts aggregate demand in the economy. Similarly, businesses' decisions to invest or hire might be swayed if they have a better grasp of monetary policy and the projected state of the economy.

Furthermore, communicating with the general public promotes democratic legitimacy and accountability. Central banks, while independent, are public institutions, with their policies having wide-ranging implications for the public at large. Engaging in transparent communication with the general public can enhance their legitimacy and trust in their actions (Ehrmann et al., 2013).

Lastly, during periods of economic uncertainty, transparent and effective communication from the central bank can help to reassure the public and alleviate panic. It aids in managing expectations, preserving confidence, and ultimately ensuring the effectiveness of monetary policy (Bernanke, 2004).

Therefore, in this era of rapid digitalization, central banks have increasingly embraced social media as platforms to communicate their monetary policies to a broader audience, leading to more frequent and diverse communication particularly targeting a non-expert audience (Moschella & Romelli, 2022).

## Central Bank Communications and Social Media

In a recent study (Masciandaro et al., 2023a), we explore how major central banks are using Twitter as a primary platform to engage with both experts and the general public. We analyze Twitter activity by G20 central banks and categorize a large sample of tweets and find that tweets announcing new coins and banknotes, as well as those related to monetary policy decisions and operations, generate higher public engagement. We also review a large literature that analyzes social media content to understand how central bank communication affects expectations and, subsequently, behaviour in financial markets.

Central banks are increasingly using direct channels for policy communication, making their websites more user-friendly and enhancing their social media presence. This shift towards direct communication channels, including social media platforms like Facebook, LinkedIn, and Twitter, signifies a new era in central bank communication strategies.

Table 1 provides information on the number of followers recorded on the social media platforms of the G20 countries' central banks as of September 2022.<sup>1</sup>

Twitter appears to be the most popular social media channel among most of the central banks, with the exceptions of the Reserve Bank of Australia, Bank of France, Bank of Italy, and the South African Reserve Bank, which are mainly followed on LinkedIn, and Bank of Korea, which is more popular on Facebook.

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<sup>1</sup> Note that the information presented in Table 1 only pertains to the institutional account of the central banks in our sample. However, an increasing number of monetary policy committee members use their personal Twitter account to inform the general public about their speeches.

Table 1: Central banks’ social media presence and followers as of September 2022

Central bank	Facebook	LinkedIn	Twitter
Central Bank of Argentina	48,977	126,001	150,003
Reserve Bank of Australia	10,560	113,194	61,301
Central Bank of Brazil	188,659	385,901	446,579
Bank of Canada	n.a.	112,850	215,786
People’s Bank of China	n.a.	n.a.	n.a.
Bank of France	14,562	167,749	44,042
Deutsche Bundesbank	8,789	29,286	34,139
Reserve Bank of India	n.a.	n.a.	1,791,333
Bank Indonesia	110,253	n.a.	844,242
Bank of Italy	n.a.	102,544	31,864
Bank of Japan	3,747	n.a.	171,752
Bank of Korea	39,299	1,515	3,333
Bank of Mexico	234,636	n.a.	895,675
Bank of Russia	n.a.	n.a.	18,547
Saudi Central Bank	12,701	155,761	797,799
South African Reserve Bank	41,902	149,730	108,844
Central Bank of the Republic of Turkey	41,778	54,280	490,275
Bank of England	42,113	214,930	370,722
Federal Reserve System	37,590	99,550	995,453
European Central Bank	n.a.	403,098	706,708

Note: The table presents data on the followers on social media platforms of G20 countries as of September 2022. The data is collected from the social media accounts advertised on the official website of these central banks. The European Central Bank is included as the central bank of the European Union. Whenever multiple profiles were advertised on the same platform, the reported data only refers to the most followed account.

To provide more details on the use of social media by central banks as a communication medium, we utilize the Twitter Academic API to gather all tweets posted by G20 central banks since their accounts were established. We collect the content, date, and language of each tweet, along with the count of likes and retweets. This process results in a database comprising 215,011 original tweets (excluding retweets) posted from June 2009 to September 2022.<sup>2</sup>

Table 2 presents data on the tweet count and engagement metrics for major central banks' social media content. Bank Indonesia, which joined Twitter in June 2010, has published approximately 40,000 tweets, more than twice as many as the Bank of France, the second most active central bank in our sample. Bank Indonesia also leads in terms of responding to tweets from other users. However, excluding this bank, the average percentage of tweets from other central banks that are responses to other social media users is a mere 2.5%.

While the quantity of tweets reflects the efforts of central banks to amplify their communication, public engagement with these posts, as indicated by likes and retweets, is another crucial factor. The final two columns of Table 2 offer insights into the average

<sup>2</sup> Around 80% of these tweets contain a link to the central bank’s webpage where more details are provided. This suggests that social media postings by central banks are aimed at catching users’ attention to specific topics to direct them to their websites, where the full set of information is provided.

impact of central bank tweets. The Saudi Central Bank leads in terms of average retweets per tweet, followed by the Bank of Japan, the Federal Reserve System, and the European Central Bank. Conversely, the Bank of France, Bank of Korea, and Bank of Russia exhibit the lowest average engagement per tweet.

We then investigate the content of individual tweets to understand if certain topics are associated with higher public engagement. To do so, we first translated all non-English tweets using Microsoft Translator, which accounted for 138,667 tweets or 65% of the sample. We then extract a random sample of 5,000 tweets and manually classify them into 9 different topics: Banknotes, Bulletins and reports, Data releases and statistics, Exchange rate information, Monetary policy, Other information, Reply to tweets, Research and conferences, Speeches and interviews.

Table 2: Central banks’ Twitter engagement statistics (as of September 2022)

Central bank	Joined	Nr of Tweets	of which Replies (%)	Engagement by users	
				Likes	Retweets
Central Bank of Argentina	May-14	11,734	1	14.04	13.89
Reserve Bank of Australia	Oct-10	2,529	1	8.19	11.77
Central Bank of Brazil	Dec-10	9,079	13	25.95	8.74
Bank of Canada	Jun-08	4,762	0	10.88	10.64
Bank of France	Dec-10	19,282	1	2.57	3.08
Deutsche Bundesbank	Aug-12	5,432	2	3.17	3.32
Reserve Bank of India	Jan-12	17,850	0	25.8	7
Bank Indonesia	Jun-10	39,643	38	14.01	7.71
Bank of Italy	Feb-12	8,249	0	1.96	2.48
Bank of Japan	Oct-11	13,458	0	93.79	37.24
Bank of Korea	Feb-14	2,086	0	1.72	1.41
Bank of Mexico	Oct-09	27,623	0	9.22	9.6
Bank of Russia	Feb-16	4,915	11	3.26	2.84
Saudi Central Bank	Oct-14	3,196	0	43.42	44.12
South African Reserve Bank	Sep-11	4,302	3	19.01	14.94
Central Bank of the Republic of Turkey	Oct-11	5,009	0	35.14	16.6
Bank of England	Jan-09	9,969	20	15.37	15.59
Federal Reserve System	Mar-09	7,823	0	24.06	20.9
European Central Bank	Oct-09	18,070	2	18.3	19.14
<b>Total</b>		<b>215,011</b>	<b>9.28</b>	<b>19.43</b>	<b>12.04</b>

Note: The table presents data on the number of tweets made by G20 central banks as of September 2022, together with the average number of likes and retweets received by their tweets. The data is collected using the Twitter Academic API. The European Central Bank is included as the central bank of the European Union. All retweets made by a central bank in reaction to tweets made by other users have been excluded.

Following this categorization, we calculate the most commonly used unigrams and bigrams for each topic, which we then use to classify the remaining tweets. This method enables us to categorize a total of 89,343 tweets, representing 42% of the sample.

Table 3 displays the distribution of classified tweets across the various topics, along with the most frequently associated words for each topic. Upon examining the ten most liked

and retweeted tweets using this classification, we discover that all of them were posted to announce the launch of new coins or banknotes.<sup>3</sup>

Table 3: Distribution of classified tweets by topic

Topic	Frequency	Words
Banknotes	318	banknote; coin
Bulletins and reports	10,104	report; bulletin
Data releases and statistics	15,487	weekly; data
Exchange rate information	10,616	dollar; exchange rate; usd
Monetary policy	6,048	operations; press conference; press release
Other info	3,100	askecb; bdfeco; blog
Reply to tweets	31,019	
Research and conferences	4,899	conference; paper; seminar
Speeches and interviews	7,752	interview; speech
<b>Total</b>	<b>89,343</b>	

Note: The table presents data on the number of tweets associated with the 9 topics identified in the classification of tweets. The last column shows the most frequent words in each classification.

Using these data, we analyse which topics are associated with greater public engagement. Our results suggest that banknote announcements attract a disproportionately higher number of retweets as compared to tweets related to all other topics. In addition, tweets discussing monetary policy decisions and operations also attract a significantly larger reaction from Twitter users.

## Conclusion

Overall, this suggests that the increased use of social media by central banks might represent an important tool to communicate monetary policy decisions. Communicating with non-experts can be challenging for policymakers as these audiences are more diverse and less likely to show interest in monetary policy announcements, and the simple and repeated communication strategy that Twitter enables might be the most effective at influencing the beliefs of households.

Indeed, the increased use of social media in central bank communication, together with the rising popularity of quantitative text analysis techniques, has given rise to a burgeoning economics literature that studies the role played by central bank social media communication. Overall, the literature so far suggests that analyzing social media content can inform policymakers about the effectiveness of communication in influencing beliefs. It can also provide a useful tool to understand how communication could be targeted more precisely to anchor expectations and influence beliefs, in particular among non-experts.

<sup>3</sup> Among the top 20 most liked and retweeted tweets, we also found the one made by the ECB on Valentine’s Day in 2021, a parody of the love poem “Roses are red”: “Roses are red Violets are blue We’ll keep financing conditions favourable ‘til the crisis is through”. As discussed by Sakari Suoninen, team leader of the European Central Bank’s (ECB) digital content team, this tweet went viral but his team “also got a lot of criticism for trying to be too light-hearted” (Choi, 2022).

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