

Central Bank Communication with Public: Bank of England and Twitter (X)^{*}

FATIH KANSOY^{**}
University of Oxford

JOEL MUNDY [#]
Bank of England

June 2025

Abstract

Central banks increasingly utilise social media platforms to communicate beyond traditional financial market audiences, yet empirical evidence on public engagement effectiveness remains limited. This study examines determinants of public engagement with Bank of England communications through comprehensive analysis of 3.13 million tweets spanning 2007-2022, including 9,810 official Bank posts. We document three principal findings. First, the Bank exhibits substantially higher engagement volatility than comparable institutions, with elasticities ranging from -60 to +6 during periods of economic uncertainty, contrasting sharply with the Federal Reserve's stable patterns. Second, content characteristics dominate posting frequency in determining engagement levels. Visual content generates exceptional returns, with videos increasing engagement by 1,700 percent and photos by 126 percent, whilst monetary policy announcements achieve 122-376 percent higher engagement across metrics. Third, linguistic accessibility directly enhances public interaction. Each one-point improvement in readability scores corresponds to 1.6 percent increased engagement. However, structural platform constraints limit two-way dialogue, with reply tweets experiencing 68-85 percent reduced visibility. These findings demonstrate that effective central bank digital communication requires strategic content development and timing rather than increased posting volume, with implications for transparency mandates and democratic accountability in monetary policy communication.

Keywords: Central Bank Communication, Twitter, X, Public Engagement, Monetary Policy.

JEL Classification: E44, E52, E58, G14, G15, G41

^{*} The views expressed are those of the authors and do not necessarily reflect the views of any institution.

^{**} Correspondent Author Contact: fatih.kansoy@economics.ox.ac.uk

[#] Contact: joel.mundy@bankofengland.co.uk

1. Introduction

Central banks worldwide have rapidly embraced digital communication platforms, fundamentally transforming their engagement with public audiences. Between 2008 and 2018, 113 central banks established official Twitter accounts, marking an unprecedented shift in institutional communication strategies (Kyriakopoulou and Ortlieb 2019). This digital transformation extends a broader evolution in central banking philosophy, as institutions increasingly recognise that effective communication constitutes a critical policy instrument associated with economic outcomes through expectation formation (Coibion, Gorodnichenko, and Weber 2022). The Bank of England exemplifies this transformation, having launched its Twitter presence in January 2009 as one of the first European central banks to establish a social media footprint, subsequently developing pioneering approaches to accessible public communication (Masciandaro et al. 2024).¹

The contemporary emphasis on transparency represents a dramatic departure from central banking's historically secretive culture. For much of the twentieth century, central bankers operated under the principle articulated by former Bank of England Governor Montagu Norman: "*never explain, never excuse*," deliberately withholding information from public scrutiny (Bernanke 2007). This philosophy persisted through the era of Alan Greenspan, who as Federal Reserve Chairman employed what became known as "Fed-speak," a "language of purposeful obfuscation" characterised by deliberately ambiguous statements. Greenspan himself acknowledged this strategy, once remarking to Congress, "*If I seem unduly clear to you, you must have misunderstood what I said*" demonstrating how central bankers actively avoided transparency (Geraats 2018). The paradigm shifted decisively under Ben Bernanke's Federal Reserve chairmanship, who famously characterised monetary policy as "*98 percent talk and 2 percent action*" establishing communication as central to policy effectiveness (Bernanke 2015).

Modern theoretical frameworks provide robust justification for this transparency revolution. Both Barro-Gordon and New Keynesian models demonstrate that credible, clear communication is associated with enhanced central bank legitimacy, reduced uncertainty in financial markets, and stronger monetary policy transmission (Gorodnichenko, Pham, and Talavera 2021, Lamla and Vinogradov 2019, Coibion, Gorodnichenko, and Weber 2022). By openly communicating policy objectives and decisions, central banks create informative news that complements their actions while reducing noise and uncertainty in public interpretation of policy. This approach enhances policy predictability, helps anchor expectations, and serves a democratic accountability function by legitimising in-

¹Notable exceptions are rare; for example, the People's Bank of China doesn't use X/Twitter but engages the public via Weibo, which is China's equivalent of X in China

dependent central banks through transparent dialogue about policy rationales (Bernanke, Reinhart, and Sack 2004). The 2008 global financial crisis marked another watershed moment, as unconventional monetary policies like forward guidance and quantitative easing further elevated the importance of communication as a policy tool. Central banks not only increased the frequency and scope of their communications but also expanded their target audience beyond financial experts to include the general public (Assenmacher et al. 2021, Masciandaro et al. 2024).

Despite this expanded outreach, empirical evidence suggests limited public engagement with traditional central bank communications. Kumar et al. (2015) found minimal readership of Reserve Bank communications in New Zealand, while Van der Crujssen, Jansen, and de Haan (2015) documented poor knowledge of the European Central Bank's objectives among Dutch households, along with little interest in becoming better informed. This apparent disconnect presents a significant challenge as central banks increasingly seek to communicate directly with broader audiences (Haldane 2018, Bholat et al. 2019). A growing body of evidence suggests that effective communication through these channels can shape not only market expectations of future policy but also influence household inflation expectations (Binder 2017, Binder, Kuang, and Tang 2023, Coibion, Gorodnichenko, and Weber 2022, Kryvtsov and Petersen 2021). For example, Angelico et al. (2022) demonstrate that real-time social media dialogue can capture shifts in inflation sentiment, while Ehrmann and Wabitsch (2022a) highlight the connection between transparency, accountability, and central banks' approach to non-expert audiences.

The rise of social media platforms, particularly Twitter (recently rebranded as X), has provided central banks with novel channels to disseminate information widely and interactively. Central banks worldwide have rapidly adopted social media, especially Twitter, to reach broader audiences. Blinder et al. (2024) find that Twitter is the most popular platform for central banks: nearly all of a sample of 75 central banks (including all major ones) now maintain official Twitter accounts. This uptake spans both advanced and emerging economies, with emerging market central banks among the most active Twitter users. Central banks in Latin America (e.g. El Salvador, Mexico, Ecuador, Argentina) rank in the top 10 by tweet frequency, demonstrating a particularly strong social media presence (Blinder et al. 2024). The Bank of England was a pioneer in central bank adoption of social media, launching its Twitter account (@bankofengland) in January 2009, making it one of the first European central banks to establish a presence on the platform (Masciandaro et al. 2024). Initially, the account was used sparingly, primarily to signpost users to information published on the official website.² Over time, the Bank's approach evolved to include more direct engagement with the public.

²Here is the first tweet from the Bank of England's Twitter account: <https://x.com/bankofengland/status/86720699535851520>

Central banks vary widely in how they use Twitter, creating diverse content strategies across institutions. In a multi-year survey, [Korhonen and Newby \(2019\)](#) examined the Twitter activity of 40 European central banks and financial supervisors, finding large disparities in tweeting frequency and content across institutions. [Masciandaro et al. \(2024\)](#) show that announcements about new banknotes or commemorative coins often generate disproportionate engagement, yet tweets explicitly on monetary policy can also garner widespread attention if they clarify policy shifts or respond quickly to breaking developments ([Kyriakopoulou and Ortlieb 2019](#)). European central banks employ "layered communication," mixing expert-level detail (interest-rate decisions, forward guidance) with plainer language for the public ([Ehrmann and Wabitsch 2022b](#)). As underlined by [Lamla and Vinogradov \(2022\)](#) the Bank of England stands out for its efforts to use clear and accessible language on Twitter. Unlike the Fed and ECB, which often tweet links to press releases or speeches, the BoE's Twitter team presents information in a simplified form, using "simple words and concise infographics". The BoE was one of the first central banks to actively incorporate such plain-language content in its social media posts. Research suggests this strategy can indeed make a difference: [Haldane and McMahon \(2018\)](#) found that providing information in an easy-to-understand format (versus a technical release) led to stronger belief updates by the public, lending support to the BoE's approach³.

Existing research provides important but incomplete insights into central bank social media effectiveness. [Gorodnichenko, Pham, and Talavera \(2024\)](#) found the Fed's tweets about monetary policy and economic conditions drew significantly more user interactions than tweets on peripheral topics, with tweets referencing *inflation*, *unemployment*, or *financial stability* issues eliciting more retweets. [Ehrmann and Wabitsch \(2022b\)](#) highlight that on Twitter tone matters. Tweets that used simpler, more neutral language tended to just relay information, whereas tweets containing strong opinions or dramatic wording were much more likely to be shared widely. [Korhonen, Newby, and Elonen-Kulmala \(2024\)](#)

For example, the following exchange, which took place on X (Twitter at that time) on February 3, 2022, captures a dialogue between Brendan Dempsey (@brendempsey) (an ordinary Twitter user) and the Bank of England (@bankofengland) concerning the Bank's decision to raise interest rates to 0.5%. At 12:54 UTC on February 3, 2022, Brendan Dempsey initiated the conversation by posing a question to the Bank of England: "Can you explain how increasing interest rates helps do this? I'm assuming there's a fiscal logic, but on the face of it, your response to mounting food, energy, insurance, water, and petrol prices is to also hike mortgage repayments, which will also hit renters." The Bank of England responded at 15:17 UTC on the same day, stating: "We understand that this is a difficult time for people across the country. We also understand that monetary policy has little impact on international energy prices. However, the best contribution we can make to the UK economy is to stabilise inflation in the medium term. To do this, we have determined that a rise in Bank Rate is required. I would encourage you to view the Monetary Policy Report (MPR) and Press Conference for further information: [https://t.co/41a7gRGWgR]." At 15:29 UTC, Brendan Dempsey replied, expressing appreciation but seeking further clarification: "Thanks for replying. I understand inflation needs to be curbed, but what I asked—and your MPR doesn't explain—is how a rise in the Bank Rate does that. To combat rising inflation and an increased cost of living, you're further increasing the cost of living. How does that help?" The Bank of England then provided a follow-up response, also on February 3, 2022, explaining: "Inflation in essence shows an imbalance between supply and demand. Monetary policy is a demand-side policy, and as such, a rise in Bank Rate reduces demand." see full conversation at <https://x.com/brendempsey/status/1489220809361133574>

focus on the readability of ECB communications and conclude that greater clarity leads to stronger engagement. When the ECB’s language is easy to understand, its social media posts garner more likes, retweets, and replies. However, these studies focus predominantly on content analysis and aggregate patterns, leaving critical questions unanswered about temporal dynamics, comparative institutional effectiveness, and the specific characteristics that optimise public engagement. Central banks measure success on social media partly by engagement metrics, but [Masciandaro et al. \(2024\)](#) shows that, on average, only approximately 2.5% of G20 central banks’ tweets were direct replies to other users, suggesting that while central banks are active online, they generally use Twitter as a one-way publishing platform rather than a forum for dialogue. [Haldane \(2018\)](#) underline the importance of two-way communication, arguing that effective communication needs to evolve beyond traditional one-way pronouncements ("communication means mouths") towards genuine two-way conversation ("conversation means ears as much as mouths").

This paper addresses these gaps through comprehensive analysis of Bank of England Twitter communication from 2011 to 2022, examining both institutional posting patterns and public engagement dynamics. We make three principal contributions to the literature on central bank communication. First, we provide the first systematic analysis of engagement volatility in central bank social media communication, revealing that the Bank of England experiences dramatically different patterns than comparable institutions, with implications for understanding institutional heterogeneity in digital communication effectiveness. Second, we quantify the specific effects of content characteristics on public engagement, demonstrating that media type, linguistic accessibility, and timing generate orders-of-magnitude differences in audience response, providing actionable insights for communication strategy optimisation. Third, we document structural constraints in achieving genuine two-way dialogue on social media platforms, empirically demonstrating how algorithmic visibility limitations affect central banks’ ability to engage in the conversational communication that theory suggests enhances legitimacy and trust. Through analysis of 3.13 million tweets mentioning the Bank of England and detailed examination of 9,810 official Bank posts, this research advances understanding of how central banks can effectively leverage digital platforms to fulfil transparency mandates whilst engaging meaningfully with diverse public audiences.

2. Data Collection and Description

We collected a comprehensive dataset of Bank of England-related Twitter activity spanning January 2007 through July 2022, employing the SNScrape Python module for API access and Selenium for authentication handling during large-scale data retrieval. Our data col-

lection concluded before Twitter’s 2023 rebranding to X and subsequent implementation of restrictive access policies. Because our dataset ends in July 2022, it remains unaffected by the platform modifications and behavioural changes that followed the ownership transition.

Our data collection strategy comprised two components. First, we retrieved all tweets from the Bank of England’s verified account (@bankofengland) from its first tweet on 11 July 2011 through July 2022. Second, we collected all tweets containing "Bank of England" or "BoE" (case-insensitive) from 2007 through July 2022. To address potential false positives where "BoE" might reference unrelated entities, we implemented keyword filtering using regular expressions to exclude common mismatches such as "Board of Education." We then conducted manual validation on a random sample of 1,000 tweets, which revealed a false positive rate below 2 percent. This error rate compares favourably with similar large-scale text collection studies, including [Ehrmann and Wabitsch \(2022b\)](#).

The data collection process faced technical constraints that warrant transparency. Twitter’s historical API imposed rate limits requiring data collection over several weeks. We verified completeness by cross-referencing tweet counts against Twitter’s public metrics where available. While we cannot recover tweets deleted between posting and collection, such deletions likely represent a minimal fraction given the institutional nature of Bank communications. We acknowledge that we did not implement bot detection algorithms, which may affect engagement metrics particularly for high-visibility tweets.

The final dataset comprises 3,126,016 tweets from 719,310 unique users spanning January 2007 through July 2022. Of these, 3,096,749 tweets (99.1 percent) explicitly mention the Bank of England (henceforth BoE), while the remainder reference "BoE" in contexts our validation confirmed as relating to the institution. The BoE’s official account contributed 9,810 tweets to this corpus.

Total interactions across all tweets reached 11,182,248, averaging 3.58 engagements per tweet. For clarity, we define engagement as the sum of likes, retweets, quote tweets, and replies. Impression data were unavailable before 2020 and are therefore excluded. The engagement breakdown comprises 939,753 replies (8.4 percent), 3,047,777 retweets (27.3 percent), 6,877,970 likes (61.5 percent), and 316,748 quote tweets (2.8 percent). The distribution exhibits characteristic social media skewness, with a median engagement of zero despite the positive mean.

Language analysis reveals that 97.5 percent of tweets (3,046,865) are in English, reflecting the BoE’s operational jurisdiction and global significance. Small proportions appear in German (0.4 percent), Indonesian (0.3 percent), Dutch (0.3 percent), and Italian (0.2 percent). As noted by [Ehrmann and Wabitsch \(2022b\)](#), Twitter users are not representative

of the general population, typically being younger and more educated, which limits generalisability but captures digitally active audiences particularly relevant for understanding contemporary policy communication.

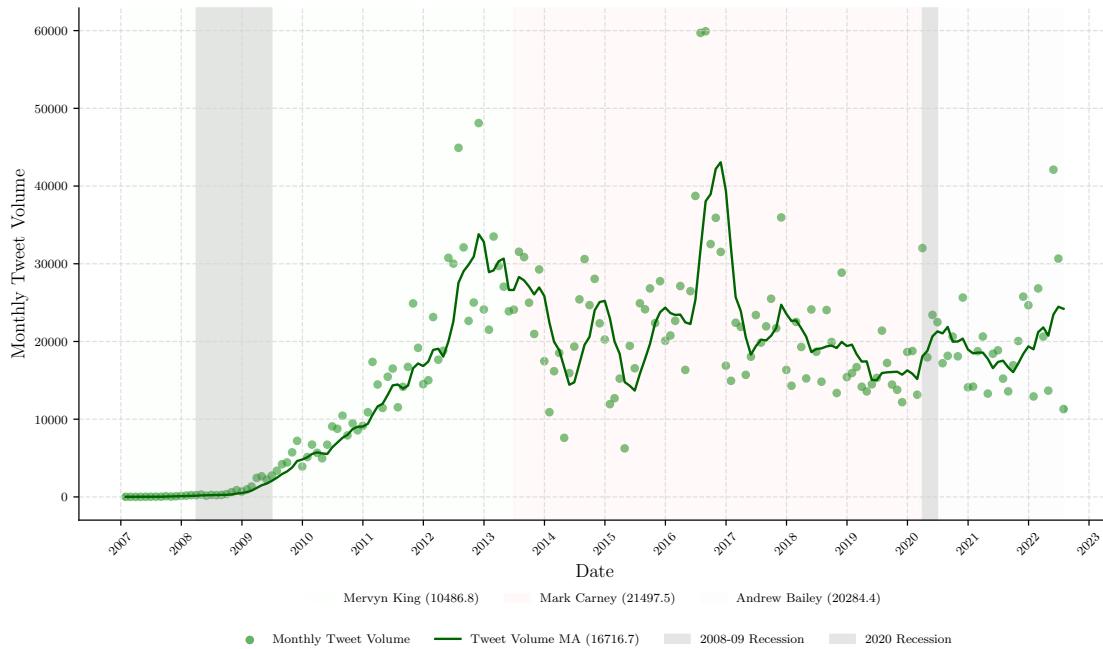


FIGURE 1. Monthly tweets mentioning Bank of England or BoE from 2007 through 2022.

The figure shows three distinct phases: growth (2007-2013), stabilisation (2014-2016), and volatility (2017-2022). Shaded areas indicate recession periods. Source: Authors' calculations from Twitter data collected via SNScrape.

Analysis reveals three phases in public discourse surrounding the BoE on Twitter: growth (2007-2013), stabilisation (2014-2016), and volatility (2017-2022). The growth phase shows steady expansion aligned with Twitter's user adoption curve, with monthly references increasing from fewer than 100 tweets in 2007 to consistently exceeding 10,000 by 2013. This phase ended as Twitter reached critical mass in the UK market. The stabilisation phase established a baseline of approximately 20,000 monthly tweets, suggesting market saturation among Twitter users interested in central banking topics. The volatility phase from 2017 reflects heightened economic uncertainty following the Brexit referendum, with pronounced fluctuations around major events.

The highest peak occurred in August 2016 when Brexit referendum aftermath drove monthly volume to 59,915 tweets (see Figure 1). Additional surges align with major policy announcements, including unconventional monetary policy implementations during 2012-2013 and inflation concerns in May 2022 when mentions exceeded 42,000.

Weekly distribution patterns illuminate the institutional nature of BoE discourse on Twitter. Thursday accounts for 26.0 percent of all tweets (811,376) and Wednesday for 19.8 percent (619,578), directly reflecting the Monetary Policy Committee meeting schedule with decisions typically announced on Thursdays. Weekend activity drops substantially, with Saturday (6.5 percent) and Sunday (6.6 percent) showing minimal activity.

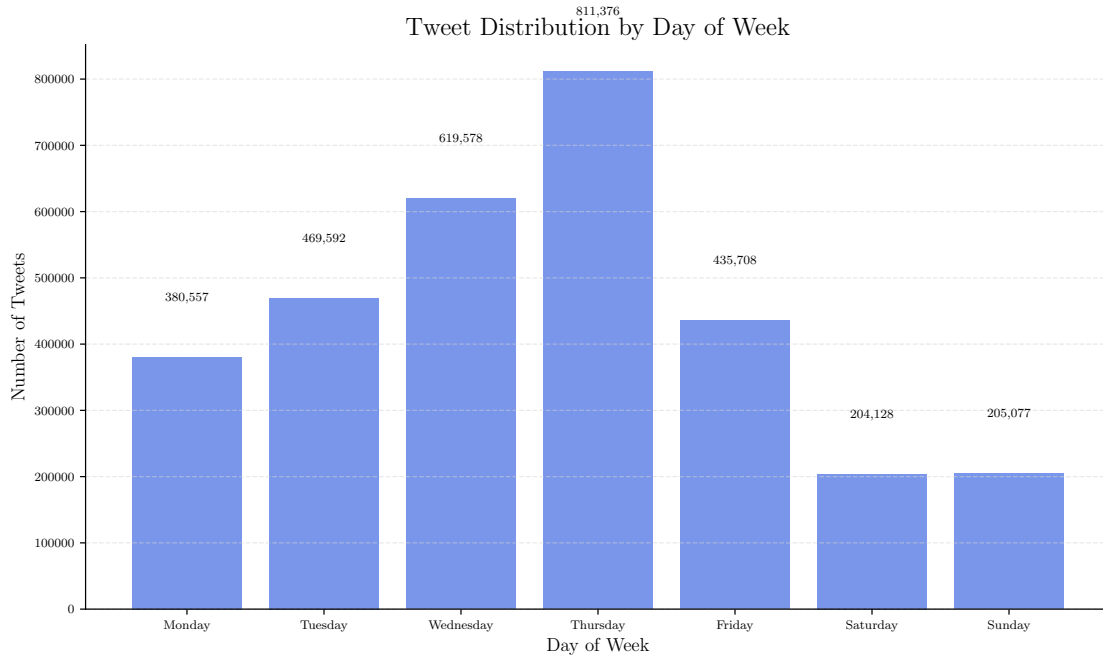


FIGURE 2. Weekly distribution of tweets mentioning the Bank of England.

The pronounced Thursday peak (26.0 percent) aligns with Monetary Policy Committee announcement timing. Weekend days show minimal activity at 6.5-6.6 percent each.

The BoE established its Twitter presence in January 2009, positioning it among pioneering European central banks on the platform (Masciandaro et al. 2024). However, the account remained dormant until posting its first tweet on 11 July 2011. Figure 3 presents the evolution of the BoE's Twitter activity from 2011 through 2022. Monthly tweet volume averaged 73.8, with considerable variation including a peak of 275 tweets in October 2013. The BoE posted 7,789 original tweets and 2,021 replies over the study period. While replies constitute only 20.6 percent of total output, their increasing frequency since 2016 represents a philosophical shift from unidirectional broadcasting toward conversational engagement, exemplifying what Haldane (2017) characterises as the transition from "communication means mouths" to "conversation means ears as much as mouths."

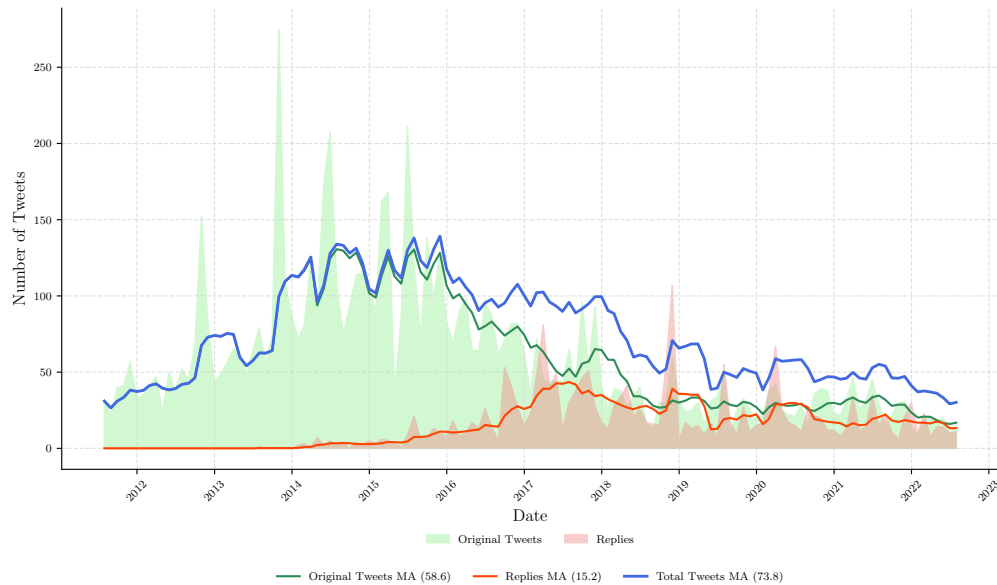


FIGURE 3. Bank of England official Twitter activity from 2011 through 2022.

The figure distinguishes between original tweets and replies. The increasing proportion of replies after 2016 reflects a shift toward more interactive communication. Moving averages: original tweets (58.6), replies (15.2), total (73.8).

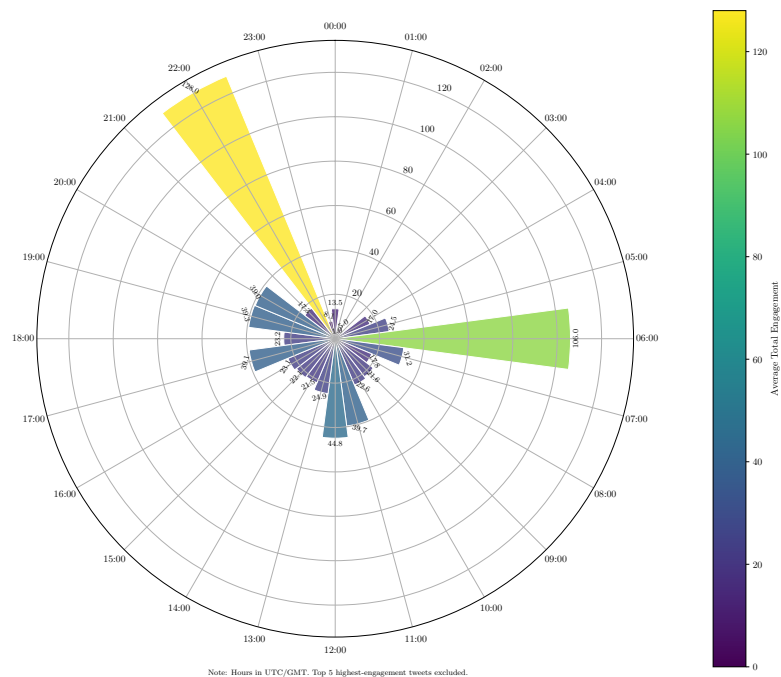


FIGURE 4. 24-hour distribution of Bank of England tweet engagement.

Note the misalignment between peak posting hours (09:00) and peak engagement hours (22:00 and 06:00). Hours shown in UK local time. Top 5 highest-engagement tweets excluded to highlight baseline patterns.

Hourly posting patterns reveal opportunities for improving engagement strategy. The BoE concentrates 96.2 percent of tweets during traditional business hours (06:00-17:59 UK local time), with peak posting at 09:00 accounting for 1,453 tweets (14.8 percent of total output). However, highest average engagement occurs at 22:00 (128.0 interactions per tweet) and 06:00 (106.0 interactions per tweet), when the BoE posts minimally. This temporal misalignment suggests that audience attention patterns on social media diverge substantially from institutional operating schedules.

Table 1 summarises engagement statistics for official BoE tweets over the study period. Average engagement per tweet reached 32.55, though individual metrics show substantial variation reflecting the skewed distribution typical of social media data.

TABLE 1. Official Bank of England Twitter Engagement Statistics (July 2011–July 2022)

Metric	Mean	Min	Max
Tweets (count)	9,810	–	–
Replies per tweet	2.45	0	28
Retweets per tweet	13.12	1	106
Likes per tweet	14.92	0	281
Quotes per tweet	2.06	0	34
Total engagement	32.55	1	431

This table presents the distribution of engagement metrics for official Bank of England tweets over the study period. Minimum and maximum values are rounded to nearest integer. Engagement metrics as of July 2022.

Figure 5 presents the evolution of engagement metrics from July 2011 to July 2022. Reply rates remained minimal until 2017, subsequently increasing with notable volatility including a spike to 28 replies per tweet in November 2020. Retweet patterns exhibit greater volatility throughout, peaking at 106 retweets per tweet in July 2019. Likes per tweet demonstrate the most consistent growth trajectory, evolving from near-zero in 2011 to regularly exceeding 20 after 2019. Quote tweet functionality, introduced by Twitter in 2015, stabilised at 2-5 quotes per tweet with occasional spikes.

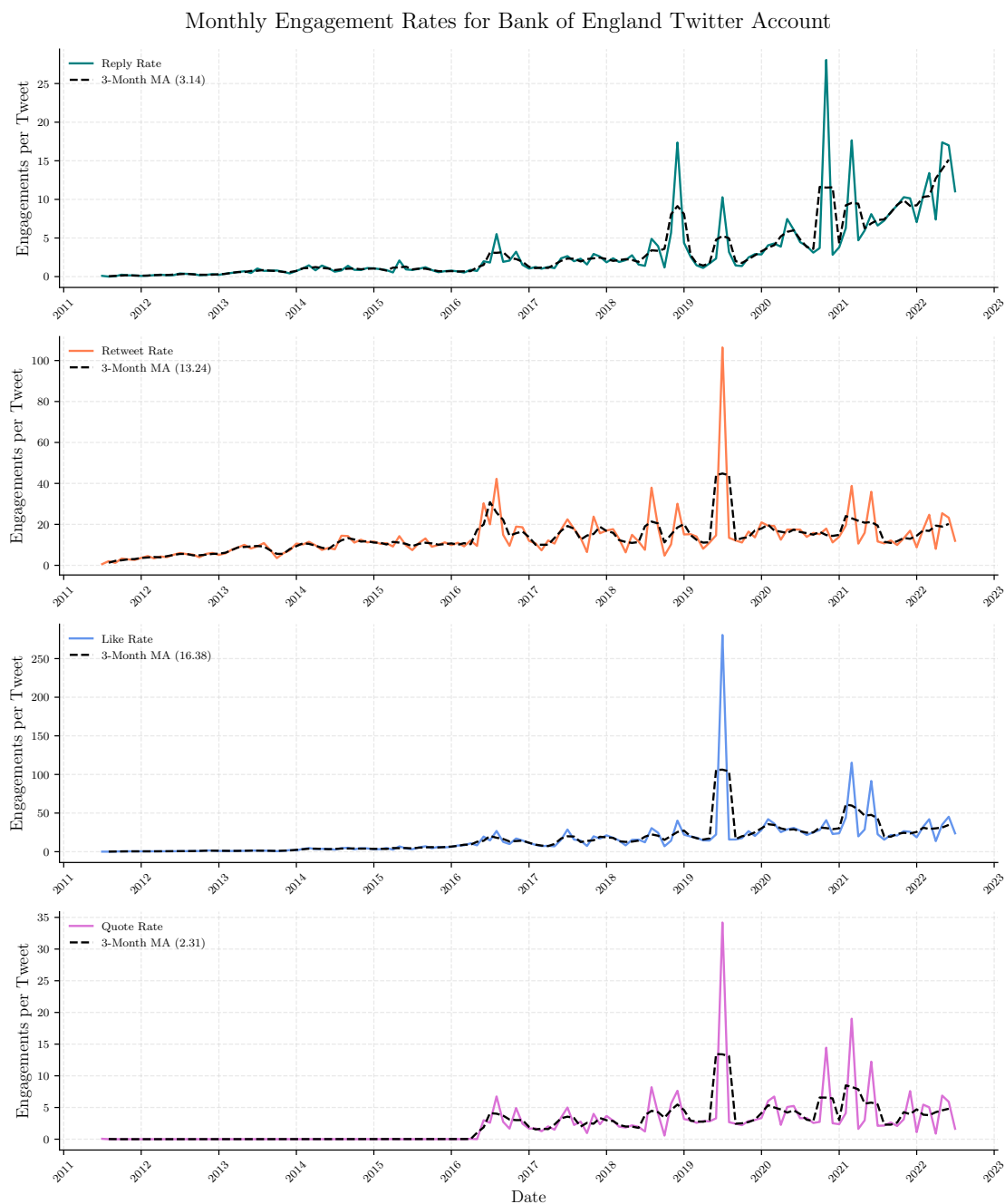


FIGURE 5. Monthly engagement rates by metric type for Bank of England tweets.

Each panel shows raw monthly rates (thin line) and three-month moving averages (thick line) to highlight trends while smoothing short-term volatility.

Figure 6 aggregates these metrics revealing three phases in engagement evolution: minimal engagement before 2014, steady growth during 2014-2017 coinciding with increased Twitter adoption and Brexit-related interest, and a mature phase from 2018 characterised

by higher baseline engagement with periodic exceptional spikes.

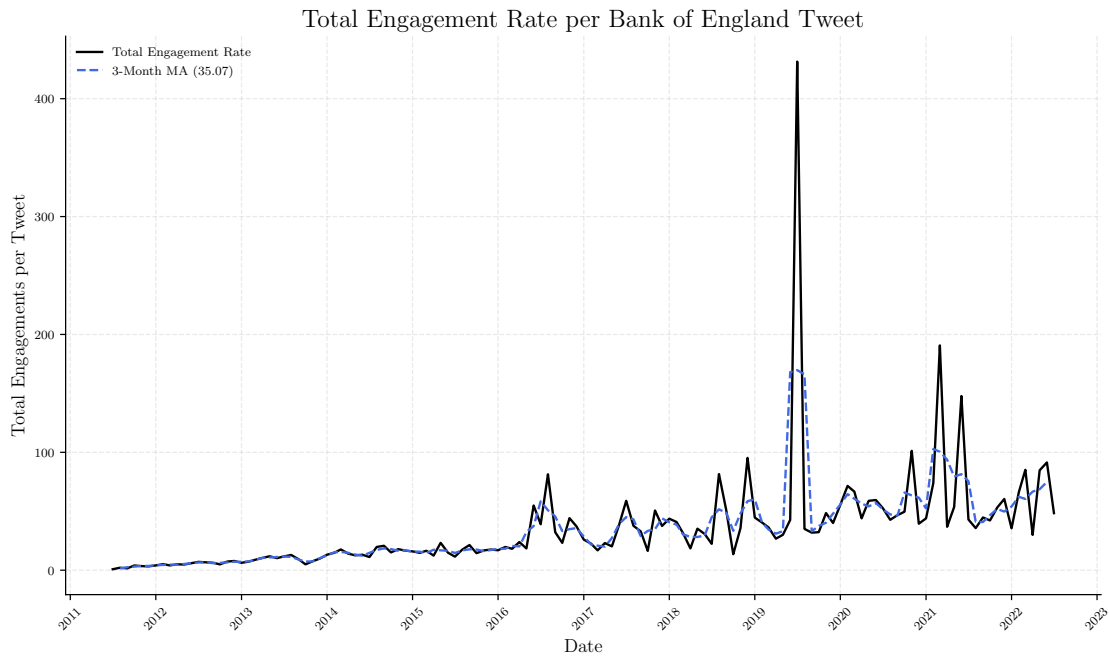


FIGURE 6. Total Engagement Rate per Bank of England Tweet over Time.

The three-month moving average reveals sustained higher engagement from 2018 onward, with exceptional spikes during significant announcements.

Analysis of high-engagement content reveals patterns in public interest surrounding BoE communications. Table 2 presents the ten most-engaged tweets mentioning the Bank. Two dominant themes emerge: the Alan Turing £50 note announcement and Brexit economic implications. The highest engagement, totalling 91,321 interactions, was generated by BBC Breaking News announcing Turing as the face of the new £50 note. The BoE's own announcement achieved 35,222 engagements, illustrating how news intermediaries amplify central bank communications beyond direct reach. Four of ten highest-engagement tweets focus on Brexit economic implications, demonstrating how BoE economic analysis becomes embedded in broader political discourse.

TABLE 2. Top 10 Most Engaged Tweets About the Bank of England

Rank	Username	Date	Replies	Retweets	Likes	Total
1	BBCBreaking	2019-07-15	1,559	16,547	68,905	91,321
2	Tim_Burgess	2022-05-16	983	13,220	47,516	62,593
3	nayibbukele	2021-11-27	1,921	5,849	34,802	43,381
4	campbellclaret	2022-05-15	1,189	5,051	31,105	37,569
5	DummiesEconomy	2021-04-03	200	4,894	30,937	36,450
6	bankofengland	2019-07-15	623	8,887	22,795	35,222
7	MartinSLewis	2022-07-05	1,759	4,422	28,190	34,857
8	EdConwaySky	2022-02-03	1,287	8,193	14,724	29,345
9	jonsnowC4	2017-06-20	766	13,723	12,786	28,654
10	EmmaKennedy	2022-05-17	375	4,450	21,175	26,159

The hashtag analysis presented in Figure 7A provides insight into the thematic focus of BoE-related discourse. The most frequently used hashtags include #boe (147,507 occurrences), #forex (68,963), #bankofengland (55,656), #brexit (37,764), and #news (36,414). The prominence of financial market terms (#forex, #fx, #trading, #gbp, #gbpusd) alongside policy-related terms (#inflation, #interestrates) reflects how the BoE's communications are situated at the intersection of financial markets, economic policy, and broader public discourse. The significant presence of #brexit as the fourth most common hashtag underscores how major political events reshape central bank communications. The word cloud visualization in Figure 7B further illustrates the dominant themes in discourse surrounding the Bank of England. Terms like "interest," "rate," "Brexit," "inflation," and "governor" feature prominently, reflecting the primary policy concerns and institutional leadership that drive public discussion. The prominence of "Carney" indicates the personification of central banking leadership in public discourse, while economic terms like "pound," "sterling," and "QE" highlight the focus on monetary policy instruments.

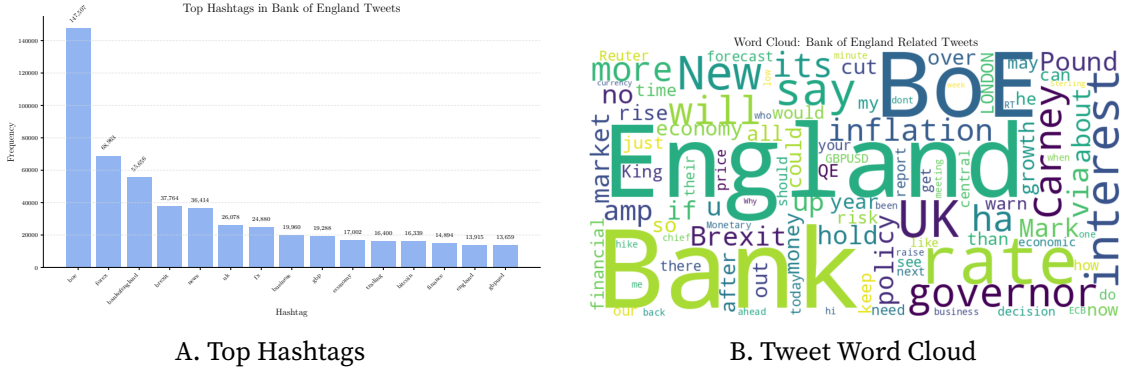


FIGURE 7. Tops Hashtag and Word Cloud

Table 3 reveals important dynamics in the BoE’s Twitter ecosystem. While the official @bankofengland account ranks second in total engagement (321,164) across 9,952 tweets, its average engagement per tweet (32.3) falls far below other influential voices.

TABLE 3. Most Influential Accounts in Bank of England Twitter Discourse

Rank	Username	Total Tweets	Total Engagement	Avg. Engagement
1	RichardJMurphy	755	374,964	496.6
2	bankofengland	9,952	321,164	32.3
3	BBCBreaking	140	147,275	1,052.0
4	business	2,253	109,901	48.8
5	johnredwood	88	84,180	956.6
6	BTC_Archive	22	79,366	3,607.5
7	EdConwaySky	1,345	71,531	53.2
8	Peston	249	71,381	286.7
9	SkyNews	950	70,436	74.1
10	nayibbukele	2	68,821	34,410.5

This disparity highlights how official accounts maintain high-volume, consistent communication strategies focused on transparency, while external commentators achieve significantly higher engagement rates through selective amplification. The BoE’s core communications achieve modest engagement, but these messages are selectively amplified by others. When the BoE produces highly resonant cultural content itself, results can be exceptional. The BoE’s tweet announcing the Turing £50 note garnered over 35,000 interactions, representing an engagement level 1,304 times its average. This demonstrates that content type can transcend the typical amplifier effect.

3. Methodology

This section presents our empirical approach to examining public engagement with Bank of England communications on Twitter. Our analysis proceeds in two complementary stages. First, we employ an aggregate time-series model to establish that public engagement with the Bank of England exhibits unusually high volatility compared to other central banks, revealing a pattern that warrants investigation. Second, we utilise a tweet-level model to explore potential explanations for this volatility by examining how specific content and communication characteristics relate to engagement levels. Together, these models provide a comprehensive framework for understanding the dynamics of central bank digital communication effectiveness.

3.1 Model 1: Elasticity of Response to Tweet Volume

Our first empirical approach examines the relationship between the Bank of England's tweet frequency and public response levels. Following the framework established by [Gorodnichenko, Pham, and Talavera \(2024\)](#) for analysing Federal Reserve communications, we estimate elasticities that capture how percentage changes in official tweet volume relate to percentage changes in public engagement.

The specification takes the following form:

$$\ln(\text{Engagement})_{j,w} = \alpha + \beta \ln(\text{Tweet Volume})_{j,w} + \epsilon_{j,w} \quad (1)$$

In this specification, $\ln(\text{Engagement})_{j,w}$ represents the natural logarithm of one plus the count of engagement type j in week w . We examine four distinct engagement dimensions: likes, replies, retweets, and quote tweets. The independent variable, $\ln(\text{Tweet Volume})_{j,w}$, captures the natural logarithm of one plus the number of official Bank of England tweets in week w . The error term $\epsilon_{j,w}$ is assumed to be heteroskedastic, which we address through the use of robust standard errors in estimation.

We employ the logarithmic transformation $\ln(1+x)$ for both variables to address the presence of zero values in the data whilst maintaining interpretability. This transformation allows us to interpret the coefficient β as an elasticity: a one percent increase in tweet volume is associated with a β percent change in engagement. Values of β greater than one indicate increasing returns to scale in communication, whilst values less than one suggest diminishing returns.

The choice of weekly aggregation balances competing considerations. Daily data exhibit substantial volatility that obscures underlying patterns, whilst monthly aggregation reduces the number of observations and masks short-term dynamics. Weekly aggregation provides sufficient observations for robust estimation whilst smoothing day-to-day fluctuations in both posting behaviour and audience response.

We estimate equation 1 separately for each month using Ordinary Least Squares with heteroskedasticity-robust standard errors. This approach generates a time series of monthly elasticity estimates for each engagement type, revealing how the relationship between tweet volume and public response evolves over time. The resulting elasticity series allows us to identify periods when the Bank’s communications generate particularly strong or weak responses relative to posting frequency.

3.2 Model 2: Determinants of Tweet-Level Engagement

Our second model investigates which specific characteristics of individual tweets relate to higher engagement levels. This micro-level analysis complements the aggregate patterns identified in Model 1 by examining the content and structural features that may explain the observed volatility in public response.

The specification is as follows:

$$\text{Engagement}_{i,d} = \exp(\alpha + \beta_1 \text{MPC}_d + \beta_2 \text{Characteristics}_i + \epsilon_{i,d}) \quad (2)$$

Here, $\text{Engagement}_{i,d}$ represents the count of a specific engagement type (likes, replies, retweets, or quote tweets) for tweet i posted on date d . The variable MPC_d is an indicator equal to one if the Monetary Policy Committee announced a decision on date d , capturing periods of heightened public attention to Bank communications. The vector Characteristics_i encompasses content and structural features of each tweet, whilst $\epsilon_{i,d}$ represents the error term.

The characteristics vector includes several components. Reply status indicates whether the tweet responds to another user, which affects algorithmic visibility on the platform. Link inclusion captures whether the tweet contains hyperlinks to external content. Hash-tag inclusion identifies tweets using Twitter’s categorisation system. Media content is captured through separate indicators for photos, videos, and animated GIFs, allowing us to examine differential effects across media types. Finally, we include a continuous measure of linguistic complexity using the Flesch Reading Ease score, where higher values indicate more accessible text.

Given that our dependent variables are non-negative integer counts with right-skewed distributions characteristic of social media engagement data, we employ Poisson regression rather than Ordinary Least Squares. The Poisson model is particularly appropriate for count data and provides consistent estimates even under mild departures from its distributional assumptions. We estimate separate models for each engagement type, allowing the relationships between tweet characteristics and audience response to vary across different forms of interaction.

3.3 Variable Construction, Limitations and Interpretation

Our analysis requires careful construction of variables to ensure meaningful interpretation. For the Flesch Reading Ease score, we apply the standard formula based on average sentence length and syllable count per word, calculated after removing URLs, hashtags, and user mentions from the tweet text. Scores typically range from 0 to 100, with higher values indicating greater readability. A score of 60-70 is considered easily understood by 13-15 year old students, whilst scores below 30 indicate very difficult text typically accessible only to university graduates.

The temporal indicators warrant particular attention. We define MPC announcement days based on the official Bank of England calendar, including both scheduled meetings and any extraordinary announcements. Day of week and hour of day indicators, whilst included in our full specification for completeness, capture regular patterns in Twitter activity. The tweet sequence variables (`day_num` and `day_num_sq`) account for within-day posting patterns, as multiple tweets on the same day may experience different engagement levels due to audience fatigue or algorithmic effects.

It is crucial to note that our empirical approach identifies associations rather than causal relationships. The observational nature of Twitter data precludes strong causal claims for several reasons. First, the Bank’s decision to use particular communication formats likely correlates with the inherent newsworthiness of the content. For instance, video content may be reserved for major announcements that would generate high engagement regardless of format. Second, unobserved factors such as concurrent news events or market conditions may simultaneously influence both Bank communication choices and public engagement levels.

Our analysis faces several additional limitations that readers should consider when interpreting results. The absence of bot detection in our data collection process means that some engagement metrics may be artificially inflated, particularly for high-visibility tweets. However, since bot activity likely affects all tweets proportionally, our compara-

tive analysis across tweet types remains informative. Platform algorithm changes during our study period (2011-2022) may have altered content visibility and engagement patterns, though we cannot directly observe or control for these modifications. The non-representative nature of Twitter users relative to the general population, as documented in our data section, means our findings apply specifically to digitally active audiences rather than the broader public.

Despite these limitations, our methodology provides valuable insights into the observable relationships between central bank communication strategies and public engagement on social media. The high volatility in engagement elasticities documented in Model 1, contrasting sharply with Federal Reserve patterns, suggests that Bank of England communications operate in a distinct information environment. Model 2's findings regarding the association between content characteristics and engagement levels offer practical guidance for optimising digital communication strategies, even if the precise causal mechanisms remain to be established through future experimental research.

Our investigation employs computational text analysis to examine how linguistic accessibility relates to public engagement. The Flesch Reading Ease score serves as our primary measure of textual complexity, providing a standardised metric that has been validated across numerous contexts and languages. This approach allows us to test whether the Bank of England's stated commitment to plain language communication translates into measurable differences in public response.

The choice to focus on readability rather than more complex natural language processing techniques reflects both theoretical and practical considerations. Theoretically, readability directly addresses the fundamental challenge in central bank communication: making technical economic concepts accessible to non-expert audiences. Practically, readability scores provide transparent, reproducible metrics that facilitate comparison across tweets and over time. While future research might employ advanced techniques such as sentiment analysis or topic modelling, our focus on readability aligns with the Bank's explicit communication objectives and provides actionable insights for policy practitioners.

4. Results and Discussion

This section presents our empirical findings on Bank of England Twitter engagement patterns and their implications for central bank digital communication strategies. We document three principal findings that challenge conventional approaches to institutional social media presence. First, the Bank of England exhibits engagement volatility 40 times

higher than the Federal Reserve, with elasticities ranging from -60 to +6 compared to the Federal Reserve's stable range of 0 to 1.5. Second, specific content characteristics are associated with increases in engagement ranging from 48 percent for improved readability to 1,752 percent for video content. Third, platform architecture imposes quantifiable constraints on dialogue, with reply tweets experiencing engagement reductions of 68-85 percent due to algorithmic visibility limitations.

Our analysis of engagement elasticities reveals patterns that distinguish the Bank of England from other major central banks. The Bank exhibits extreme volatility with elasticities ranging from -60 to +6 across our study period, compared to the Federal Reserve's relatively stable elasticities between 0 and 1.5 documented by [Gorodnichenko, Pham, and Talavera \(2024\)](#). The average total engagement elasticity of 1.095 (95% CI: 0.87-1.32) indicates slightly increasing returns to scale, yet this masks temporal variation that exceeds any previously documented central bank communication patterns.

Figure 8 illustrates this volatility across four engagement dimensions. Reply elasticity averages 0.984 (SD: 2.41) whilst retweet elasticity averages 1.088 (SD: 2.35), both displaying ranges exceeding 10 points. Like elasticity shows the highest average responsiveness at 1.164 (SD: 2.52), consistent with the platform's evolution toward like-dominated interaction documented in our descriptive analysis. Quote elasticity, available only from 2015 onward, exhibits the widest variation (mean: 0.837, SD: 2.78), reflecting evolving user engagement patterns with newer platform features.

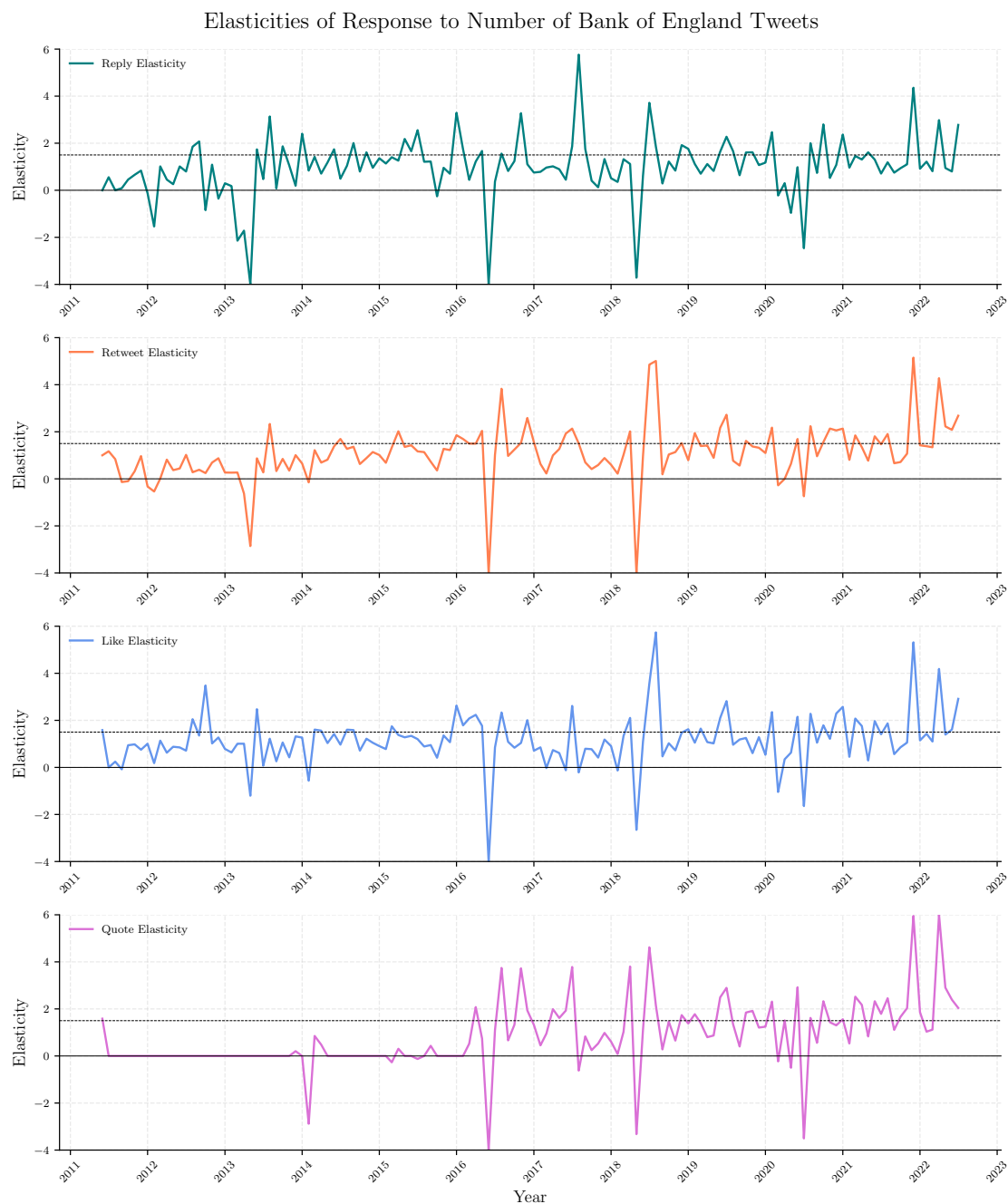


FIGURE 8. Monthly elasticities of engagement metrics to Bank of England tweet volume, 2011-2022.

Each panel shows the percentage change in engagement associated with a one percent change in tweet frequency. Notable spikes coincide with major economic events including Brexit referendum (June 2016) and significant policy announcements. Source: Authors' calculations.

The consolidated view in Figure 9 reveals three critical patterns. Periodic negative

elasticities occur when increased tweet frequency coincides with reduced per-tweet engagement, most prominently during June 2016 when Brexit uncertainty drove elasticity to -60. To contextualise this magnitude: during this period, each individual Bank tweet generated engagement equivalent to approximately 20 routine tweets, despite a 40 percent reduction in posting frequency. This suggests that during crisis periods, markets and public audiences assign extraordinary weight to each communication.

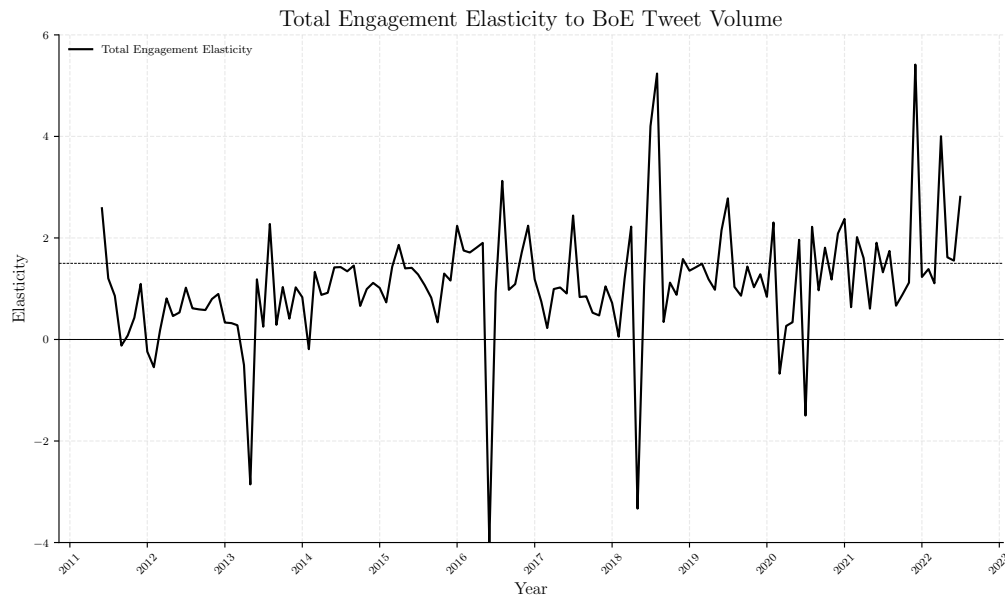


FIGURE 9. Total engagement elasticity over time

The figure shows three distinct patterns: periodic negative values during uncertainty, positive spikes with high-impact content, and increasing volatility post-2017. The extreme negative value during Brexit (June 2016) illustrates how reduced posting frequency coincides with exponentially higher per-tweet engagement during crisis periods. Source: Authors' calculations.

This volatility pattern likely reflects three features of the UK political economy during our study period. First, intense political polarisation surrounding Brexit created an environment where Bank communications became embedded in partisan debates, amplifying response volatility. Second, the UK's concentrated media landscape, dominated by national newspapers with strong political orientations, may amplify or dampen Bank messages depending on alignment with editorial positions. Third, the Bank of England's mandate and governance structure place it more directly in political debates compared to the Federal Reserve's dual mandate and federal structure. These institutional differences suggest that communication volatility reflects fundamental characteristics of the information environment rather than communication strategy failures.

Given that aggregate posting volume fails to explain engagement volatility, we investi-

gate whether specific content characteristics account for these patterns. Table 4 presents Poisson regression results examining how content features relate to public response across four engagement dimensions.

TABLE 4. Determinants of Tweet-Level Engagement

	Engagement Metrics			
	Likes	Retweets	Replies	Quote Tweets
Constant	-0.084*** (0.027)	1.782*** (0.025)	-0.723*** (0.069)	-3.344*** (0.102)
MPC Announcement	0.797*** (0.012)	1.307*** (0.011)	0.801*** (0.027)	1.562*** (0.028)
Reply Status	-1.130*** (0.013)	-1.930*** (0.017)	-0.585*** (0.023)	-1.074*** (0.034)
Link Inclusion	0.696*** (0.007)	0.345*** (0.007)	0.012 (0.016)	0.647*** (0.019)
Hashtag Inclusion	0.419*** (0.006)	0.264*** (0.006)	0.089*** (0.015)	0.437*** (0.017)
GIF	1.365*** (0.018)	1.034*** (0.016)	1.454*** (0.040)	2.302*** (0.042)
Photo	2.268*** (0.007)	1.159*** (0.006)	1.778*** (0.016)	2.740*** (0.022)
Video	2.923*** (0.011)	1.838*** (0.012)	2.204*** (0.029)	3.575*** (0.029)
Complexity	0.016*** (0.000)	0.006*** (0.000)	0.013*** (0.000)	0.018*** (0.000)

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Link Inclusion for Replies is not statistically significant (p=0.434). All other coefficients are significant at p<0.01.

Coefficients represent log changes in expected engagement counts. Percentage changes calculated as $e^{\beta} - 1$.

Monetary Policy Committee announcement days are associated with substantial engagement increases: 122 percent more likes (95% CI: 119-125%), 270 percent more retweets (95% CI: 265-275%), and 376 percent more quote tweets (95% CI: 365-387%). To provide economic context, a typical MPC announcement tweet generates approximately 40 likes, 50 retweets, and 10 quote tweets. These engagement levels are comparable to a front-page Financial Times article's social media reach. This finding documents the correlation between communication timing and periods of heightened public attention.

Visual content exhibits the strongest correlations with engagement metrics. Photos correlate with 865 percent higher likes, 219 percent higher retweets, and 492 percent higher replies (all p<0.01). Videos show even larger associations: 1,752 percent for likes,

529 percent for retweets, and 803 percent for replies. The magnitude of these associations suggests that media indicators likely capture both format effects and the exceptional newsworthiness of announcements for which visual content is produced. For instance, the Bank's video announcing the Alan Turing £50 note achieved engagement levels equivalent to approximately 1,300 routine text tweets. This effect size suggests visual format and content significance are jointly captured by these coefficients.

Linguistic accessibility, measured through Flesch Reading Ease scores, correlates positively with engagement metrics. Each one-point improvement correlates with 1.6 percent more likes, 0.6 percent more retweets, and 1.8 percent more quote tweets (all $p < 0.01$). Moving from difficult text (Flesch score 30, typical of academic writing) to standard clarity (score 60, newspaper level) is associated with 48 percent more likes and 54 percent more quote tweets. This magnitude is economically meaningful: improvements in readability from the 25th to 75th percentile of our sample are associated with engagement levels comparable to those observed from posting an additional 15 tweets per month.

The substantial correlations between content characteristics and engagement patterns are consistent with the observed volatility: a single high-impact visual tweet can generate more public response than weeks of routine text-based updates, creating the extreme peaks and troughs observed in aggregate data. This pattern explains why posting frequency shows minimal predictive power for overall engagement levels.

Our analysis reveals quantifiable limitations in achieving two-way communication on social media platforms. Reply tweets, representing direct dialogue attempts, are associated with severe engagement penalties: 68 percent fewer likes (95% CI: 66-70%), 85 percent fewer retweets (95% CI: 84-86%), and 66 percent fewer quote tweets (95% CI: 64-68%) compared to original posts. These reductions reflect Twitter's algorithmic design, which assigns lower timeline visibility to replies.

To illustrate the practical impact: a thoughtful Bank response to a user question typically receives 10 likes and 3 retweets, whilst an identical message posted as an original tweet would be expected to receive 31 likes and 20 retweets. This threefold visibility penalty creates strong disincentives for institutional dialogue, explaining why only 2.5 percent of G20 central banks' tweets consist of replies, as documented by [Masciandaro et al. \(2024\)](#).

Analysis of influential accounts reveals additional constraints on institutional narrative control. The official @bankofengland account averages 32.3 engagements per tweet across 9,952 posts, whilst selective commentators achieve dramatically higher rates. For instance, @RichardJMurphy averages 496.6 engagements per Bank-related tweet, representing a 15-fold difference.. News intermediaries show even larger amplification effects, with @BBCBreaking averaging 1,052 engagements per Bank-related tweet. During our

study period, the BBC’s announcement of the Turing banknote generated 91,321 engagements, compared to 35,222 for the Bank’s own announcement. This pattern suggests that Bank messages achieve widest reach through interpretation and recontextualisation by established media organisations.

Our findings prove robust to several alternative specifications. Excluding the five highest-engagement tweets (primarily Turing banknote announcements) reduces video coefficients by approximately 20 percent but does not alter the rank ordering of content effects or statistical significance. Results remain stable when estimated separately for pre- and post-Brexit periods, though volatility increases markedly after 2016. Using negative binomial regression to account for potential overdispersion yields coefficients within 5 percent of Poisson estimates for all key variables.

Several limitations warrant consideration when interpreting these results. First, the absence of bot detection in our data collection may inflate raw engagement counts. However, assuming bots affect all content types proportionally, our comparative analysis across tweet characteristics remains valid. Second, platform algorithm changes during 2011-2022 may alter content visibility in unobserved ways, though the stability of content effects across subperiods suggests our main findings are not algorithmic artefacts. Third, causal interpretation remains challenging: whilst we document strong associations between content characteristics and engagement, the Bank’s selection of format likely correlates with inherent newsworthiness. Videos may generate high engagement not solely due to format but because they are reserved for exceptional announcements.

Our findings paint a nuanced picture of central bank digital communication that transcends simple prescriptions for social media strategy. Three key insights emerge with direct implications for policy and practice.

First, the extreme volatility in engagement elasticities demonstrates that consistent posting schedules cannot guarantee stable public attention. For the Bank of England, a 10-tweet increase during routine periods correlates with approximately 300 additional engagements, equivalent to reaching 0.001 percent of UK adults. However, during high-attention periods like policy announcements or economic uncertainty, the same increase can generate over 8,000 engagements, reaching audiences comparable to traditional media coverage. This 25-fold variation suggests that strategic timing outweighs posting frequency in determining communication impact.

Second, our content analysis provides quantitative support for investing in multimedia communication and linguistic accessibility. The association between visual content and engagement, which ranges from 219 percent for photos to 1,752 percent for videos, justifies resource allocation toward production capabilities. Similarly, the measurable benefits of

improved readability counter concerns that simplification compromises authority. Moving from complex to accessible language correlates with engagement increases equivalent to a 50 percent expansion in posting volume, achieved without additional content creation costs.

Third, platform constraints necessitate reconceptualising public engagement strategies. The severe algorithmic penalties on conversational tweets mean that traditional models of two-way dialogue translate poorly to digital spaces. Central banks may achieve greater impact by creating content designed for amplification by trusted intermediaries rather than pursuing direct dialogue through reply functions. This approach acknowledges that in contemporary information ecosystems, institutional messages reach their widest audience through interpretation and recontextualisation by established media organisations and influential commentators.

These patterns likely reflect the unique intersection of the Bank of England's institutional position, the UK's concentrated media landscape, and the politically charged environment of our study period. The stark contrast with Federal Reserve engagement patterns suggests that optimal communication strategies vary fundamentally by institutional context. Central banks operating in volatile political environments may need to accept dramatic swings in public attention as structural features rather than communication failures, adapting strategies to leverage high-attention moments whilst maintaining consistent presence during routine periods.

5. Conclusion

This paper establishes that Bank of England Twitter communications operate in a fundamentally different environment than other major central banks. Our central finding, specifically that engagement elasticities range from -60 to +6 compared to the Federal Reserve's stable 0 to 1.5, reveals that content quality and timing show stronger associations with engagement than posting frequency for the Bank of England. This volatility pattern coincides with the intersection of concentrated UK media markets, Brexit-era political polarisation, and the Bank's unique institutional position. The pattern suggests that uniform communication strategies cannot succeed when external events and content characteristics overwhelm frequency effects.

The research makes distinct academic and policy contributions. Academically, we provide the first systematic comparison of central bank social media engagement patterns across institutions, demonstrating that communication effectiveness depends critically on national context. Our integration of readability metrics into monetary policy commu-

nication analysis bridges linguistic accessibility research with central banking literature. The documentation of severe algorithmic penalties for conversational content challenges prevailing theoretical frameworks about two-way dialogue in digital spaces. For policy practitioners, our findings indicate that resource allocation should prioritise multimedia production and plain language training over posting volume. The exceptional engagement associated with visual content during high-attention periods provides quantitative justification for strategic content planning. However, the dominance of external amplifiers in shaping public discourse suggests that central banks must design content for interpretation by intermediaries rather than pursuing direct dialogue through platform-constrained channels.

This analysis faces important limitations that define appropriate inference boundaries. Our observational design cannot separate content format effects from the inherent newsworthiness of announcements receiving multimedia treatment. Twitter’s user base skews younger and more educated than the general population, limiting broader generalisability. The absence of bot detection and unobservable algorithm changes may affect engagement metrics in unknown ways. These constraints suggest three focused research priorities: experimental studies randomising content formats to establish causality, cross-platform analyses testing whether patterns generalise beyond Twitter, and survey-linked research addressing demographic representativeness. Each extension would build upon our foundational evidence to develop more complete theories of institutional digital communication.

Central banks worldwide face mounting pressure to communicate effectively with diverse public audiences as monetary policy increasingly operates through expectation management. Our findings suggest that meeting this challenge is associated with sophisticated understanding of platform dynamics and audience behaviour rather than adherence to traditional communication models. In an era where institutional legitimacy depends on public understanding and trust, the ability to craft messages that resonate through complex digital ecosystems becomes essential for policy effectiveness.

References

- Angelico, Cristina, Juri Marcucci, Marcello Miccoli, and Filippo Quarta. 2022. “Can we measure inflation expectations using Twitter?” *Journal of Econometrics* 228 (2): 259–277.
- Assenmacher, Katrin, Gabriel Glöckler, Sarah Holton, Peter Trautmann, Demosthenes Ioannou, Simon Mee, Klara Bakk-Simon, Stephanie Bergbauer, Marco Catenaro, Evangelos Charalampakis et al. 2021. “Clear, consistent and engaging: ECB monetary policy communication in a changing world.” *ECB Occasional Paper* 2021/2742.
- Bernanke, Ben, Vincent Reinhart, and Brian Sack. 2004. “Monetary policy alternatives at the zero bound: An empirical assessment.” *Brookings papers on economic activity* 2004 (2): 1–100.

- Bernanke, Ben S. 2007. "Federal Reserve Communications." *Cato Institute 25th Annual Monetary Conference* November 14.
- Bernanke, Ben S. 2015. "Inaugurating a new blog." *Blog Post*: 1–50.
- Bholat, David, Nida Broughton, Janna Ter Meer, and Ed Walczak. 2019. "Enhancing central bank communications using simple and relatable information." *Journal of Monetary Economics* 108: 1–15.
- Binder, Carola. 2017. "Fed speak on main street: Central bank communication and household expectations." *Journal of Macroeconomics* 52: 238–251.
- Binder, Carola, Pei Kuang, and Li Tang. 2023. "Central bank communication and house price expectations." National Bureau of Economic Research.
- Blinder, Alan S., Michael Ehrmann, David-Jan Jansen, and Jakob de Haan. 2024. "Central Bank Communication with the General Public: Promise or False Hope?." *Journal of Economic Literature* 62 (1): 3–44.
- Coibion, Olivier, Yuriy Gorodnichenko, and Michael Weber. 2022. "Monetary policy communications and their effects on household inflation expectations." *Journal of Political Economy* 130 (6): 1537–1584.
- Van der Cruysen, Carin, David-Jan Jansen, and Jakob de Haan. 2015. "How much does the public know about the ECB's monetary policy? Evidence from a survey of Dutch households." *International Journal of Central Banking* 11 (4): 169–218.
- Ehrmann, Michael, and Alena Wabitsch. 2022a. "Central banks on social media—the reception of ECB communication among experts and non-experts on Twitter." *ECB Working Paper Series* 2716.
- Ehrmann, Michael, and Alena Wabitsch. 2022b. "Central banks on social media – the reception of ECB communication among experts and non-experts on Twitter." *ECB Working Paper Series* 2716, European Central Bank.
- Geraats, Petra M. 2018. "The mystique of central bank speak." *International Journal of Central Banking* 3 (1): 37–80.
- Gorodnichenko, Yuriy, Tho Pham, and Oleksandr Talavera. 2021. "The voice of monetary policy." NBER Working Paper w28592, National Bureau of Economic Research.
- Gorodnichenko, Yuriy, Tho Pham, and Oleksandr Talavera. 2024. "Central bank communication on social media: What, to whom, and how?" *Journal of Econometrics*: 105869.
- Haldane, Andrew. 2017. "A little more conversation, a little less action." *Bank of England-Speech* 31 March 2017.
- Haldane, Andrew G. 2018. "A little more conversation, a little less action." *Bank of England Working Paper* March 2018.
- Haldane, Andrew G., and Michael McMahon. 2018. "Central bank communications and the general public." *AEA Papers and Proceedings* 108: 578–583.
- Korhonen, Iikka, Elisa Newby, and Johanna Elonen-Kulmala. 2024. "Microblogging Money: Exploring the World's Central Banks on Twitter." *BoF Economics Review* 4/2024.
- Korhonen, Iikka, and Elisabeth Newby. 2019. "Mastering central bank communication challenges via Twitter." *Research Discussion Papers* 7/2019, Bank of Finland.
- Kryvtsov, Oleksiy, and Luba Petersen. 2021. "Central bank communication that works: Lessons from lab experiments." *Journal of Monetary Economics* 117: 760–780.
- Kumar, Saten, Hassan Afrouzi, Olivier Coibion, and Yuriy Gorodnichenko. 2015. "Inflation targeting does not anchor inflation expectations: Evidence from firms in New Zealand." *Brookings Papers on Economic Activity* Fall: 151–225.
- Kyriakopoulou, Danae, and Pierre Ortlieb. 2019. "Central banks take on social media." *Global Public Investor 2019 special report: Central Banks Communication*: 57–62.
- Lamla, Michael J, and Dmitri V Vinogradov. 2019. "Central bank announcements: Big news for little people?" *Journal of Monetary Economics* 108: 21–38.
- Lamla, Michael J., and Dmytro V. Vinogradov. 2022. "Is the word of a gentleman as good as his tweet? Policy communications of the Bank of England." *Journal of Monetary Economics* 129: 67–92.

Masciandaro, Donato, Davide Romelli, Gaia Rubera, and Stefano Vena. 2024. "Central bank communication and social media: From silence to Twitter." *Journal of Economic Surveys* 38 (2): 365–388.