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# The (not so) quiet period: Communication by ECB decision-makers during monetary policy blackout days<sup>☆</sup>



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## ABSTRACT

We use confidential data to provide an empirical primer on the European Central Bank's (ECB) monetary policy quiet period between 2008 and 2021. Breaches of blackout rules happen regularly and their frequency is heterogeneous across ECB Governing Council members. We document that quiet period breaches trigger high-frequency market reactions that are up to more than twice as large as the median market reaction to speeches in inter-meeting periods. Controlling for member and time fixed effects, we find that breaches respond to absolute inflation deviations of policy-makers' constituencies from the ECB's target and to interest rate spreads inside the euro area. We also exploit plausibly exogenous variation in the ECB's rotational voting schedule to show that non-voting members do not engage in strategic communication during the quiet period to lock in their voting peers.

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## 1. Introduction

Strategic communication efforts by individual central bankers represent powerful tools to shape market expectations in the run-up to monetary policy meetings. Although clear and transparent communication enhances the predictability and transmission of monetary policy (Blinder et al., 2008; Ehrmann and Fratzscher, 2013), members of decision-making bodies can also exploit public appearances to push markets into their individually desired policy directions. Such “communications arms races” reduce overall welfare because they limit policy flexibility and lower the quality of deliberations (Vissing-Jorgensen, 2020). Cacophonous communication in the run-up to policy meetings may also result in larger macroeconomic forecast errors in academic and private sector projections (Lustenberger and Rossi, 2020). To preempt these adverse effects, central banks observe so-called “quiet periods” during the days preceding monetary policy meetings.<sup>1</sup> In the quiet period,

<sup>☆</sup> Any views expressed in this paper exclusively represent those of the authors and do not reflect the official viewpoint of the Oesterreichische Nationalbank, the ECB or the Eurosysteem. As an ESCB-external co-author, Phillipp Gnan had no direct access to the original confidential Eurosysteem data used in this paper. He only accessed fully anonymized versions of the compiled data set and never viewed the original statements underlying the count data.

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<sup>1</sup> Major central banks usually discuss their quiet period rules on their websites, e.g. Bank of England (2019), European Central Bank (2019), and the U.S. Federal Reserve's Federal Open Market Committee (2017).

also known as “blackout” or “Purdah” period, monetary policy-makers commit to not make any market-sensitive public statements (Ehrmann and Fratzscher, 2009).

Yet, the impact of quiet periods may be ambiguous. Precisely because they reduce the overall amount of relevant public interventions shortly before policy meetings, quiet periods can turn individual non-compliant statements into particularly influential means of communication. This very nature of quiet periods as double-edged swords raises a list of questions. How often do breaches of quiet period rules occur? Does the frequency of breaches change over time? Do violations of quiet period rules impact financial markets? Do they foreshadow policy changes and/or dissent among policy-makers? And: what motivates policy-makers to issue non-compliant statements in the first place? So far, empirical evidence on these questions has proven elusive for at least three reasons. First, breaches of quiet period rules are usually not publicly announced by the monetary authority. Hence, there is no readily available data base of statements which are non-compliant according to the central bank’s own definition. Second, *ex post* efforts to classify public statements into breaches and compliant communication are arguably subject to personal perceptions and biases. Third, selection concerns make it hard to uncover robust correlations in the data: monetary policy-makers endogenously select into speaking and media coverage of individual statements may also be unequally distributed.

Our paper exploits confidential, central bank-internal data to address these challenges. Using global public news outlets, the European Central Bank’s (ECB) Directorate General Communications compiles summaries of all publicly reported statements by members of the ECB Governing Council to monitor their compliance with quiet period rules. These summaries document who talked, about what and when during the seven days prior to every monetary policy meeting. They explicitly distinguish between quiet period breaches (so called “statements about the future monetary policy stance and economic developments”) and other non-market sensitive statements. We encode these data for all ECB monetary policy meetings between October 2008 and December 2021. We complement the resulting statement-level data set with meta information on individual statements and Governing Council members’ characteristics. Thanks to our unique data source, we do not have to take a subjective stance on whether a particular statement by an ECB Governing Council member represents a breach of blackout rules or not. Instead, we can directly build our analysis on the responsible ECB directorate’s latent definition of quiet period violations.

We draw on this new data set of quiet period communication in the euro area to furnish the following contributions. First, we marshal descriptive evidence on the evolution of quiet period breaches between 2008 and 2021. Breaches in the euro area occur regularly. On average, every quiet period since 2008 featured at least one non-compliant statement: 134 breaches occurred during 131 quiet periods. Overall, 14% of the recorded attributable statements issued during the seven days prior to policy meetings represent violations of quiet period rules (134 out of 991 statements). The frequency of non-compliant statements varies over time and, more enticingly, quiet period discipline is clearly heterogeneous across ECB Governing Council members.

Second, we document that markets perceive quiet period breaches in the euro area as relevant monetary policy news. We start by comparing high-frequency market reactions around quiet period breaches to market movements around Placebo events. We then compare high-frequency market reactions around breaches to the impact of monetary policy-related statements issued by Governing Council members before the start of the quiet period. Breaches trigger substantial changes in risk-free interest rates, both relative to Placebo events and relative to communication prior to the quiet period. We show that the large market reactions to breaches are almost exclusively driven by statements issued by ECB executive board members. Thus, markets seem to pay more attention to non-compliant statements by specific groups of Governing Council members. In addition, the financial market impact of breaches only has a statistically significant effect on the short end of the yield curve. This suggests that individual quiet period breaches are most informative about the timing of monetary policy decisions, rather than about the “in-principle” stance of monetary policy going forward. We also draw on comparisons with additional external benchmarks. The median reaction to quiet period breaches is up to more than twice as large as the median market reaction to speeches in inter-meeting periods as estimated by Istrefi et al. (2022). Also, non-compliant statements trigger market reactions that amount to 50–100% the size of the average market reaction to the release of the ECB’s actual policy decisions, as measured by Altavilla et al. (2019). Finally, despite the clear evidence for noteworthy market responses, we find no indication that the number of quiet period breaches occurring before Governing Council meetings is predictive of policy changes; nor does the number of non-compliant statements significantly correlate with a measure of dissent characterizing the ECB’s policy decisions, as compiled by Tillmann (2021).

Third, we explore possible drivers explaining the heterogeneity in breaching behavior across ECB Governing Council members. We purge the variation in quiet period breaches from member-level and time-specific idiosyncratic effects to identify an economically interpretable “breach reaction function”. In particular, we find that two covariates relevant for the ECB’s price stability mandate are systematically and positively correlated with non-compliance during the quiet period: the absolute inflation deviation of individual policy-makers’ constituencies from the euro area target and the spread between long-term interest rates in policy-makers’ constituencies relative to those prevailing in Germany.<sup>2</sup> Furthermore, we show that statements at the beginning of the quiet period are more likely to constitute breaches than those issued just before the policy meeting. As may be expected, pre-meditated, written speeches are also less likely to constitute

<sup>2</sup> In our baseline specification, statements by ECB executive board members are matched with (weighted) average data for the euro area as a whole. In the robustness checks, we draw on country of origin data for ECB executive board members.

non-compliant communication than more *ad hoc* statements (e.g. live interviews and press conferences). Crucially, our statement-level data allow us to gauge the potential effect of selection bias on our coefficient estimates. Statement-level regressions evaluate the drivers of breaches conditional on making (i.e. selecting into) a statement. We directly compare coefficient estimates from statement-level regressions to unconditional member-level panel regression results which cover all ECB Governing Council members, including those who do not speak during a given quiet period. We find that our results are robust across both specifications.

Finally, we exploit exogenous variation in ECB Governing Council members' voting rights to analyze whether non-voting members engage in strategic communication efforts to lock-in their voting peers during monetary policy quiet periods. Since 1 January 2015, ECB Governing Council members rotate voting rights according to a schedule first laid out in 2014. For all monetary policy meetings ever since, the first schedule pre-determined which national central bank governors are allowed to vote.<sup>3</sup> We estimate a causal treatment effect of the (absence of the) right to vote on quiet period breaches that is not statistically different from zero. Thus, non-voting members do not engage in strategic communication efforts to lock-in their voting peers during monetary policy quiet periods. Extending our analysis of rotational voting to members' overall communication efforts during quiet periods (i.e. the sum of breaches and non-breaches), we show that non-voting status causes the intensive margin of total statements to fall relative to members bearing voting rights. Since quiet period communication events may be media demand- rather than supply-driven, we also check for the robustness of these results by drawing on all relevant media meetings and speeches from national central bank governors' published calendars. We find no indication that (not) having the right to vote influences media demand for statements.

Our findings contribute to several literatures. First, drawing on data consistently recorded and classified by specialized central bank staff, our study constitutes an empirical primer analyzing monetary policy-makers' public statements during the ECB's quiet period. Our coverage and data go significantly beyond an older study by [De Haan and Jansen \(2006\)](#) who collect statements exclusively from the Bloomberg newswire archives for the early period between 1998 and 2002, when the ECB's official quiet period rules were still in their infancy. Second, our paper complements recent evidence on the impact of central bank communication in the euro area ([Gertler and Horvath, 2018](#); [Bennani et al., 2020](#); [Istrefi et al., 2022](#)) by disentangling the effects of non-compliant statements during the quiet period from those of overall inter-meeting communication efforts. Our results also connect to earlier work by [Ehrmann and Fratzscher \(2009\)](#) on the Federal Reserve's FOMC. We confirm their findings in the euro area context: on average, statements issued in close proximity to the ECB's monetary policy meetings trigger substantially larger financial market reactions than communication efforts outside the quiet period window. Third, our results are related to the growing evidence on monetary policy home bias in the euro area ([Badinger and Nitsch, 2012](#); [Badinger and Nitsch, 2014](#)).<sup>4</sup> In particular, we build on recent work identifying national biases in central bank communication ([Bennani and Neuenkirch, 2017](#); [Moschella and Diodati, 2020](#)). We show that non-compliant behavior during the quiet period systematically correlates with divergences between policy-makers' constituencies and euro area targets or benchmarks relevant for the ECB's monetary policy. Fourth, we contribute to a still small literature studying the effects of rotational voting on monetary policy committees ([Belke and von Schnurbein, 2012](#); [Bosman et al., 2013](#); [Ehrmann et al., 2022](#)).<sup>5</sup> [Bennani and Neuenkirch \(2017\)](#) first raised the question of whether the introduction of rotational voting led to an increased use of ECB communication to voice disagreement and exert influence on the decision-making process. Quiet period breaches could represent a perfect tool to compensate for the loss of formal influence. We find that this "compensation hypothesis" is not borne out in the data. Our paper thus echoes similar findings by [Ehrmann et al. \(2022\)](#) who show that rotational voting on the FOMC did not lead committee members to substitute more communication efforts for the periodical absence of voting rights. Yet, our study also differs from [Ehrmann et al. \(2022\)](#) in two dimensions. On the one hand, we focus on the impact on communication efforts during monetary policy quiet periods, when market-sensitive statements are prohibited, but also particularly powerful. On the other hand, the Federal Reserve's FOMC and the ECB Governing Council constitute different types of decision-making committees ([Ehrmann and Fratzscher, 2007](#)). In contrast to the FOMC, the ECB Governing Council is commonly known for its aspiration to seek consensus-based decisions. Accordingly, the euro area decision-making body is traditionally seen to communicate in a rather collegial manner. Recent work suggests, however, that consensual decision-making became less frequent during Mario Draghi's presidency ([Claeys and Linta, 2019](#); [Tillmann and Walter, 2019](#); [Bernoth and Dany-Knedlik, 2020](#); [Tillmann, 2021](#)). Our assessment of the effect of voting right rotation on quiet period discipline therefore provides an empirical test of the narrative of the ECB Governing Council as a collegial decision-making body for the period since 2015.

The remainder of this paper is organized as follows. In Section 2, we briefly explain the institutional context of our study and we describe our data sources. We also discuss descriptive graphical evidence on policymakers' communication efforts during the quiet period. Section 3 provides our estimates for the financial market impact of quiet period breaches. In addition, Section 3 analyzes the predictive power of breaches for policy changes and dissent. Section 4 explores the drivers of

<sup>3</sup> This rotational voting scheme does not apply to ECB Executive Board members who always bear the right to vote.

<sup>4</sup> See [Holmström \(1999\)](#) for a seminal article on the related literature on career concerns and [Hansen et al. \(2017\)](#) for an application to the context of monetary policy-making.

<sup>5</sup> Monetary policy committees tend to outperform individual decision-makers for a variety of reasons ([Waller, 2000](#); [Blinder and Morgan, 2005](#); [Gerling et al., 2005](#); [Goodfriend, 2005](#); [Lombardelli et al., 2005](#); [Gerlach-Kristen, 2006](#); [Blinder, 2007](#)), but the marginal benefits of getting additional members on board is likely decreasing in committee size ([Sibert, 2006](#); [Hansen et al., 2014](#); [Riboni and Ruge-Murcia, 2017](#); [Rieder, 2022](#)). Larger monetary policy committees are particularly prone to free-riding or "shirking" behavior, increasing the propensity of some individuals to rely on and hide behind the other members' performance. Rotational voting schemes constitute an attempt to mitigate this trade-off and to combine the best of two worlds.

non-compliance during the quiet period. It also covers the effects of the ECB's rotational voting scheme on quiet period communication. Section 5 concludes. An online appendix complements the paper.<sup>6</sup>

## 2. Background and descriptive evidence

### 2.1. Details on the ECB's quiet period

The ECB's quiet period was first introduced in 2001 by President Wim Duisenberg and extends over the seven days prior to monetary policy meetings. As ECB policy decisions are typically communicated on a Thursday, the quiet period usually starts on the Thursday of the preceding week. The ECB's quiet period rules prohibit statements explicitly referring to the future stance of monetary policy. In addition, the rules also disallow comments on the economic outlook more generally (e.g. developments in inflation, economic growth, labor markets, fiscal and structural reforms or exchange rates).

The systematic monitoring of Governing Council members' compliance with quiet period rules started during the presidency of Jean-Claude Trichet (Powell, 2013). Ever since October 2008, the ECB's Directorate General Communications screens global news outlets to compile consistently formatted summary reports of public statements by Governing Council members in the quiet period.<sup>7</sup> These summaries distinguish three categories of statements: i) statements referring explicitly to the future monetary policy stance and economic developments; ii) statements explicitly declining to comment on such matters; iii) statements *not* referring explicitly to policy-relevant topics. The summaries are circulated to all Governing Council members and their core monetary policy staff on the day before the policy meeting. Hence, all Council members are able to observe their peers' compliance with the quiet period. Members who disobeyed the quiet period rules by making statements falling into the first category may be informally admonished prior to or during the ECB Governing Council meeting by their peers and may suffer from reputational consequences. Yet, to date, no formal sanctions for non-compliance are in place.

### 2.2. New data

We exploit the proprietary summaries compiled by the ECB's Directorate General Communications to collect the information on Governing Council members' public statements in the run-up to all monetary policy meetings between October 2008 to December 2021. We adopt and transcribe the Communications Directorate's classification of these statements into the above-mentioned three categories (breaches, statements declining to comment, and statements on unrelated topics) to obtain a pooled cross-sectional data set at the statement-level. The underlying data are systematically sourced from a broad range of public news outlets<sup>8</sup>, likely capturing close to all relevant statements during each quiet period. Given that the statements are centrally and routinely compiled by ECB staff, one can reasonably assume that the series' coverage is also internally consistent over time. By adopting the ECB's very own classification of statements into breaches and non-breaches, we perfectly capture the ECB's internal notion of a violation of quiet period rules. As a corollary, the statement categories in our data are free from potential subjective biases which would otherwise make it difficult for external researchers to reproduce the ECB's latent definition of a quiet period breach. For the 131 monetary policy quiet periods between October 2008 and December 2021, we observe 991 public statements from 68 distinct members of the Governing Council. Out of these 991 statements, the ECB classifies 134 as explicit breaches of the quiet period, i.e. as statements about the future monetary policy stance or economic developments.

### 2.3. Descriptive evidence

Fig. 1 describes broad trends in quiet period communication by ECB Governing Council members. The *overall* amount of public statements (Panel A) follows a clear downward trend for several years after peaking in the aftermath of the Global Financial Crisis (GFC) in 2008/2009. Since 2015, the frequency of total communication events during the quiet period has remained fairly stable. For the frequency of quiet period breaches (Panel B), we also observe an initial decline in the wake of the GFC and, in particular, during the culmination of the European sovereign debt crisis. In contrast to overall communication, however, the incidence of quiet period breaches has rebounded since 2014. This suggests that earlier increases in quiet period discipline among Governing Council members have stalled in the course of recent years.

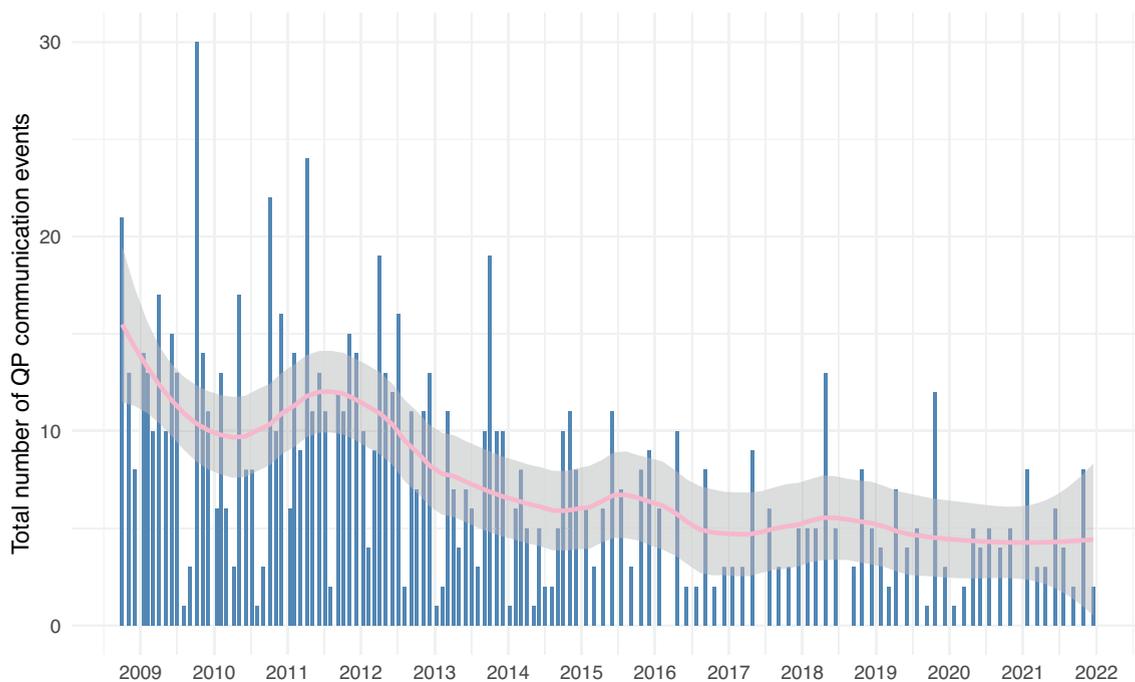
In addition to the considerable time variation in quiet period discipline, Fig. 2 documents a pronounced degree of heterogeneity in quiet period communication across individual members of the ECB Governing Council. For each member, we compute the average number of communication efforts across all meetings in which the member participated. We summarise the resulting member-specific averages in histograms (see Fig. 2). While some members strictly adhere to quiet period rules, others seem to communicate during (and even breach) the quiet period on a regular basis. In the following sections, we both exploit and explain this variation in breaching behavior over time and across Governing Council members.

<sup>6</sup> The online appendix is provided as supplementary material to this paper (c.f. Appendix A).

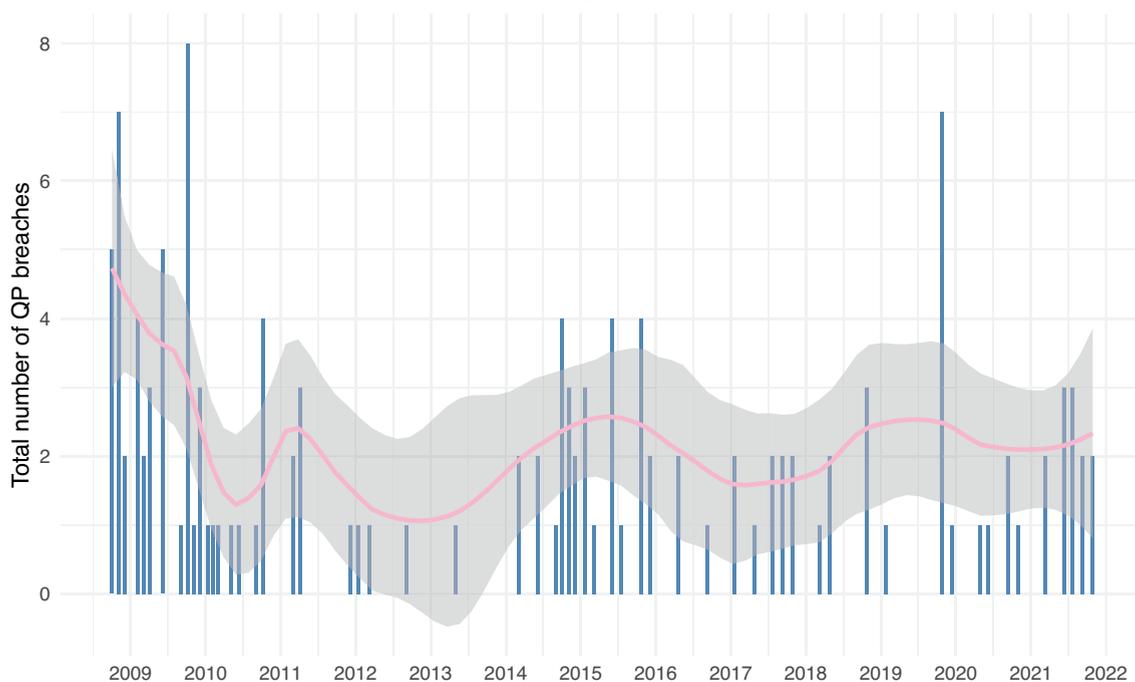
<sup>7</sup> The summary reports are available for some time before October 2008, but their format and the classification criteria for public statements changed several times in this early period.

<sup>8</sup> Monitored news outlets include Reuters News, Bloomberg, Market News International and Dow Jones Newswires.

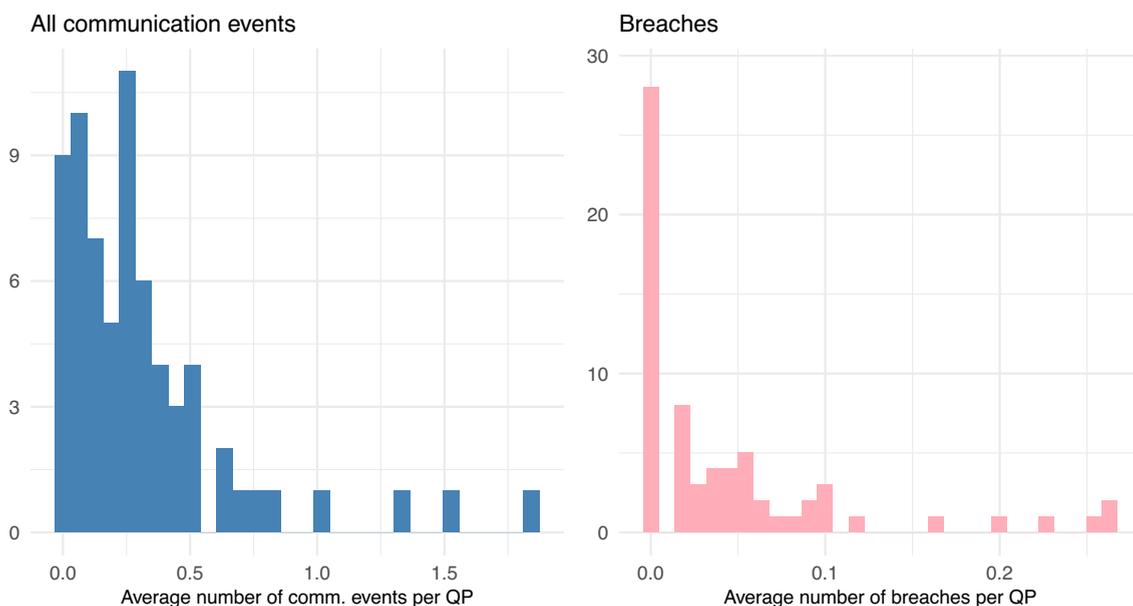
Panel A. Total communication events during the quiet period



Panel B. Breaches of quiet period rules



**Fig. 1. Time trends in quiet period communication** This figure shows the evolution of overall quiet period communication (panel A) and quiet period breaches (panel B) by ECB Governing Council members between October 2008 and December 2021. Bars in blue count incidences for each individual quiet period. The pink lines represent a polynomial smooth of the raw time series including a 95% confidence interval.



**Fig. 2. Cross-sectional variation in quiet period discipline** This figure shows the degree of heterogeneity in the incidence of total quiet period communication efforts and quiet period breaches across individual ECB Governing Council members. For each member, we compute the average number of communication events across all meetings in which the member participated. We summarise the resulting member-specific averages in histograms.

### 3. Informational relevance of quiet period breaches

Quiet period breaches may exert a negative influence on the quality of the monetary policy decision-making process if they shape public expectations about upcoming – but still outstanding – monetary policy decisions. If this were the case, cacophonous communication efforts by individual policy makers could increase private macroeconomic forecast errors (Lustenberger and Rossi, 2020) or weaken market responses to the future policy decisions (Tillmann, 2021). Breaches might also lock in the decision-making committee on a specific policy path before the deliberation phase can be duly concluded (Vissing-Jorgensen, 2020).

To test whether quiet period breaches are perceived as credible and relevant monetary policy news, we examine high-frequency financial market reactions to non-compliant statements. The use of high-frequency data allows us to cleanly separate market reactions to quiet period breaches from other, potentially confounding events occurring on the same day. Earlier evidence for the United States suggests that financial markets are particularly sensitive to policy makers' comments shortly before policy decisions (Ehrmann and Fratzscher, 2009). In addition, for the euro area, Gertler and Horvath (2018) and Istrefi et al. (2022) document that communication between policy meetings by some, albeit not all, policy-makers can indeed move markets. We revisit and extend this evidence with a particular focus on quiet period breaches in the euro area.

Drawing on Reuters, Bloomberg and MNI newswires, we identify the exact time stamp for each statement in our data set of quiet period breaches. The summaries compiled by the ECB's Directorate General Communications mainly feature full articles, presumably to back up the classification of statements into compliant and non-compliant communication events. Since the writing-up process for full articles takes some time, relying on time stamps for full articles would likely induce an artificial lag between the timing of the actual communication event and the article release on one of the above-mentioned news platforms. Hence, we check the newswires for breaking news headlines preceding – but directly corresponding to – the full articles in the summaries. We elicit the relevant high frequency time stamps by choosing the first breaking news headline that provides live coverage on the communication event in question. This approach allows us to pinpoint a precise event window for each communication event in our database of breaches. More concretely, we define an asymmetric 35-min event window that starts 5 min before the relevant breaking news headline's time stamp and ends 30 min after its release.<sup>9</sup> We calculate the absolute basis point change,  $|\Delta y_i|$ , for short- to medium-term Overnight Index Swap (OIS) rates (with maturities of 1 month, 3 months, 6 months, 1 year, and 2 years)<sup>10</sup> for the event window as the change between the median quote during

<sup>9</sup> Typically, the time span between first live reporting headline corresponding to a particular communication event and the last breaking news headline for the same event does not exceed 30 min.

<sup>10</sup> OIS rates are obtained from the Thomson Reuters Tick History data base, which we purge from misquotes and discretize to minute-frequency before computing event window changes.

the 10 min before and the median quote during the 10 min after the event window. Thus, for event  $i$  and associated time stamp  $t$ , we compute  $|\Delta y_i|$  as follows:

$$|\Delta y_i| = |\text{med}\left(\{y_{t+k}\}_{k=30+1}^{30+10}\right) - \text{med}\left(\{y_{t-k}\}_{k=5+1}^{5+10}\right)| \quad (1)$$

Similar in spirit to [Istrefi et al. \(2022\)](#), we begin with gauging the market relevance of quiet period breaches by comparing interest rate changes over a high-frequency event window around *actual* breaches to market reactions around randomly sampled *Placebo* events. For our Placebo events, we randomly sample 5,000 date-time combinations from trading days which fall into the ECB's quiet periods between October 2008 and December 2021. Placebo time stamps are sampled uniformly from all possible time stamps during trading hours in the quiet period, but with the condition that the overall distribution of the sampled time stamps' distance to monetary policy meetings matches the distance-to-meeting distribution of time stamps for actual breaches. Our Placebo interest rate changes are defined as in Eq. 1. To compare actual breaches to Placebo events, we pool the computed high-frequency market reactions for both types of events and we estimate the linear regression model defined in Eq. 2, separately for each maturity. In Eq. 2,  $B_i$  is a dummy variable that takes a value of 1 for actual breaches and 0 for Placebo events. Table A1 in the online appendix presents the corresponding summary statistics.

$$|\Delta y_i| = \alpha + \delta B_i + \epsilon_i \quad (2)$$

Coefficient estimates for the model in Eq. 2 are displayed in columns 1–5 of [Table 1](#). In columns 6–10, we further distinguish between three types of actual breaches. The first type of breaches originates from members of the ECB executive board. The second type stems from Governing Council members belonging to the first group of the ECB's rotational voting schedule (Germany, France, Italy, Netherlands, and Spain, i.e. the largest euro area economies). The third type of breaches was issued by the remaining members of the Governing Council, i.e. representatives of smaller euro area countries belonging to the second rotational voting group.

We draw three main conclusions from the results shown in [Table 1](#). First, across all specifications and taking Placebo events as the benchmark, absolute movements in interest rates around quiet period breaches are unusually large. Second, the estimated effects are much more pronounced at the short end of the yield curve, both in terms of economic size and statistical significance (c.f. columns 1–2 and 6 in [Table 1](#)). Third, the financial market impact of breaches is entirely driven by non-compliant statements issued by members of the ECB executive board. The average absolute change in 1 month and 3 months OIS rates is between 2 to 4 times larger for breaches by ECB executive board members than for rate changes following Placebo events. [Table A3](#) in the appendix shows that this result is robust to controlling for year fixed effects.

In a complementary exercise, we directly compare the financial market impact of breaches to the effect of attributable communication events prior to the quiet period. For this purpose, we filter the entire Reuters news archive covering the period between 1 September 2008 and 31 December 2021 to identify communication events (i.e. statements, speeches, press conferences etc.) issued by members of the ECB Governing Council before the quiet period.<sup>11</sup> This first step yields approximately 27,000 breaking news headlines corresponding to about 8,000 individual events. Next, we randomly sample 20% of these individual events and we tag the topics covered in every breaking news item belonging to these events by hand to identify items (and corresponding time stamps) related to monetary policy. The goal of this second filtering round is to ensure a comparable information content of statements during and prior to the quiet period. This strategy allows for a fair "horse race" between quiet period breaches – which, by definition, deal with sensitive topics relevant to monetary policy – and our comparison cases, i.e. attributable communication preceding the seven days before meetings. More concretely, for our comparison group, we only select news items in which Governing Council members discuss interest rates, unconventional monetary policy, inflation, growth and exchange rates.

[Table 2](#) summarizes the results of this horse race (summary statistics can be found in [Table A1](#) in the online appendix). Our estimation strategy is identical to the one defined by Eqs. 1 and 2 above, except that the model intercept now captures the new baseline, i.e. relevant pre-quiet period communication, instead of our Placebo events. The structure of [Table 2](#) mirrors [Table 1](#): columns 1–5 of [Table 2](#) pool all types of breaches, whereas columns 6–10 again distinguish between breaches issued by ECB executive board members, rotational voting group 1 and rotational voting group 2. The results in [Table 2](#) confirm the gist of our Placebo event regressions. Breaches trigger larger financial market impacts than comparable pre-quiet period communication. This holds particularly true for the short end of the yield curve, where the increase is both statistically significant and sizeable: the impact of non-compliant statements is about 70% larger than comparable pre-quiet period events. Differentiating between groups of Governing Council members, we again find that the heightened financial market impact in the quiet period is driven by statements issued by the ECB executive board. The results shown in [Table 2](#) also continue to hold after we control for year fixed effects (c.f. [Table A4](#)).

The economic size of our estimated effects is meaningful in the context of existing research on the financial market impact of central bank communication. To put our coefficient estimates into perspective, [Table A2](#) in the online appendix compares the size of interest rate changes around breaches issued by Governing Council members to two additional benchmarks. First, we consider average market reactions to the release of the ECB's actual policy decisions, taken from the Euro Area Monetary Policy Event-Study Database (EA-MPD) maintained by [Altavilla et al. \(2019\)](#). The magnitude of average mar-

<sup>11</sup> Statements issued on the days directly following a policy decision predominantly relate to the past rather than to the next policy meeting. We therefore only consider statements which are more than four days away from the previous monetary policy decision.

**Table 1**  
High-frequency market reactions to quiet period breaches and Placebo events.

	OIS 1 M (1)	OIS 3 M (2)	OIS 6 M (3)	OIS 1Y (4)	OIS 2Y (5)	OIS 1 M (6)	OIS 3 M (7)	OIS 6 M (8)	OIS 1Y (9)	OIS 2Y (10)
Placebo	0.2552*** (0.0060)	0.2583*** (0.0060)	0.2646*** (0.0055)	0.3299*** (0.0072)	0.4390*** (0.0085)	0.2552*** (0.0061)	0.2583*** (0.0060)	0.2646*** (0.0055)	0.3299*** (0.0072)	0.4390*** (0.0085)
$\delta_{\text{breach}}$	0.2087** (0.0964)	0.1279* (0.0732)	0.0748 (0.0521)	0.0787 (0.0644)	0.1138 (0.0841)					
$\delta_{\text{ECB}}$						0.8898* (0.4883)	0.4449 (0.2928)	0.2271 (0.1858)	0.1026 (0.1668)	-0.0240 (0.1437)
$\delta_{\text{large}}$						0.0387 (0.0759)	0.1260 (0.0923)	0.0004 (0.0426)	0.0221 (0.0614)	0.0852 (0.0844)
$\delta_{\text{small}}$						0.1870 (0.1298)	-0.0036 (0.0903)	0.1179 (0.1069)	0.1519 (0.1455)	0.2147 (0.1966)
Observations	5,066	5,073	5,084	5,085	5,086	5,066	5,073	5,084	5,085	5,086
Breaches	66	73	84	85	86	66	73	84	85	86
R-squared	0.0030	0.0013	0.0006	0.0004	0.0006	0.0083	0.0029	0.0013	0.0006	0.0009

Heteroskedasticity-robust Huber–White standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

This table summarizes linear regression estimates of the marginal impact of quiet period breaches on the size of overnight index swap (OIS) rate movements over a given event window. The dependent variable in all regressions is the absolute change in an OIS rate,  $|\Delta y_{i,t-5,t+30}|$  (in basis points), over a 35 min event window that starts 5 min before a given article's time stamp and ends 30 min after its release. Changes in interest rates are calculated as the change between the median quote during the 10 min preceding the event window and the median quote during the 10 min following the event window. For each regression, changes in interest rates around actual events are combined with market reactions around 5,000 randomly sampled Placebo non-events. In columns 1–5,  $\delta_{\text{breach}}$  represents the estimated increase in the absolute magnitude of market rate changes around actual quiet period breaches relative to Placebo events. In columns 6–10,  $\delta_{\text{ECB}}$ ,  $\delta_{\text{large}}$  and  $\delta_{\text{small}}$  separate the effects of breaches for different groups of Governing Council members, differentiating between ECB executive board members, rotational voting group 1 (i.e. larger countries) and rotational voting group 2 (i.e. smaller countries).

**Table 2**  
High-frequency market reactions to quiet period breaches and pre-quiet period statements.

	OIS 1 M (1)	OIS 3 M (2)	OIS 6 M (3)	OIS 1Y (4)	OIS 2Y (5)	OIS 1 M (6)	OIS 3 M (7)	OIS 6 M (8)	OIS 1Y (9)	OIS 2Y (10)
Pre-quiet period	0.2749*** (0.0215)	0.2595*** (0.0177)	0.2598*** (0.0157)	0.3389*** (0.0194)	0.4583*** (0.0267)					
$\delta_{\text{breach}}$	0.1889* (0.0988)	0.1267* (0.0753)	0.0795 (0.0542)	0.0697 (0.0670)	0.0946 (0.0880)					
Pre-QP ECB						0.2552*** (0.0287)	0.2676*** (0.0258)	0.2440*** (0.0202)	0.2974*** (0.0258)	0.3950*** (0.0358)
Pre-QP large						0.2896*** (0.0446)	0.2554*** (0.0294)	0.2771*** (0.0296)	0.3935*** (0.0356)	0.5184*** (0.0466)
Pre-QP small						0.2966*** (0.0446)	0.2474*** (0.0429)	0.2696*** (0.0393)	0.3507*** (0.0470)	0.5092*** (0.0668)
$\delta_{\text{ECB}}$						0.8898* (0.4926)	0.4356 (0.2955)	0.2477 (0.1878)	0.1351 (0.1695)	0.0199 (0.1486)
$\delta_{\text{large}}$						0.0043 (0.0883)	0.1289 (0.0972)	-0.0121 (0.0517)	-0.0415 (0.0709)	0.0058 (0.0964)
$\delta_{\text{small}}$						0.1456 (0.1380)	0.0073 (0.1002)	0.1129 (0.1143)	0.1311 (0.1534)	0.1445 (0.2084)
Observations	409	500	545	551	553	409	500	545	551	553
Breaches	66	73	84	85	86	66	74	84	85	86
R <sup>2</sup>	0.0205	0.0116	0.0063	0.0031	0.0031	0.0727	0.0279	0.0139	0.0114	0.0123

Heteroskedasticity-robust Huber–White standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

This table summarizes linear regression estimates of the marginal impact of quiet period breaches on the size of overnight index swap (OIS) rate movements over a given event window, relative to the impact of statements by Governing Council members made prior to the quiet period. The dependent variable in all regressions is the absolute change in an OIS rate,  $|\Delta y_{i,t-5,t+30}|$  (in basis points), over a 35 min event window that starts 5 min before a given statement's time stamp and ends 30 min after its release. Changes in interest rates are calculated as the change between the median quote during the 10 min preceding the event window and the median quote during the 10 min following the event window. In columns 1–5,  $\delta_{\text{breach}}$  represents the estimated increase in the absolute magnitude of market rate changes around quiet period breaches relative to Governing Council members' statements prior to the quiet period. In columns 6–10,  $\delta_{\text{ECB}}$ ,  $\delta_{\text{large}}$  and  $\delta_{\text{small}}$  separate the effects of breaches for different groups of Governing Council members, differentiating between ECB executive board members, rotational voting group 1 (i.e. larger countries) and rotational voting group 2 (i.e. smaller countries).

ket reactions to quiet period breaches by ECB executive board members amounts to between 50 and 100 percent of the average absolute reaction to the ECB's own press release after monetary policy meetings. For national central bank governors, the corresponding relative magnitude is smaller (30%–70%). Second, [Istrefi et al. \(2022\)](#) report median market reactions to a comprehensive set of speeches by various groups of ECB policy-makers over the last two decades. The communication events used in [Istrefi et al. \(2022\)](#) occur throughout the *entire* inter-meeting period, i.e. predominantly outside quiet periods, and cover a broad range of different topics. For the short end of the yield curve, median reactions to quiet period breaches are up to more than twice as large as the market reactions to speeches reported by [Istrefi et al. \(2022\)](#).

To sum up, quiet period breaches lead to sizable market reactions. The financial market impact of breaches is larger than for statements further away from monetary policy decisions and it mainly reflects reactions to non-compliant statements by particularly “important” members of the Governing Council. Moreover, we show that market reactions to breaches mainly concentrate on the short end of the yield curve, i.e. maturities covering the upcoming and just very few additional policy meetings. This finding is interesting, because it hints at the way in which quiet period breaches may be able to steer market expectations. Based on our evidence, we conjecture that breaches are perceived as informative about the precise *timing* of policy changes (i.e. whether a rate hike will be decided at the upcoming policy meeting or the meeting thereafter), rather than the “in-principle” stance of monetary policy going forward.

Apart from identifying the impact of quiet period breaches on high-frequency financial variables, we also explore the predictive power of aggregate communication behavior during a given quiet period for meeting-level outcomes.<sup>12</sup> *Ex ante*, the effects of statements during the quiet period is not clear-cut. Communication efforts during quiet periods might or might not foreshadow policy changes. On the one hand, defending the *status quo* may require less public interventions due to the underlying tendency towards decision-making inertia in committee settings (Riboni and Ruge-Murcia, 2008; Riboni and Ruge-Murcia, 2017). On the other hand, the absence of policy changes may itself constitute the result of a hard-fought “communications arms race” (Vissing-Jorgensen, 2020). Indeed, recent research suggests that the use of unconventional monetary policy tools increasingly pits groups of ECB Governing Council members against each other (Claeys and Linta, 2019; Tillmann and Walter, 2019; Bernoth and Dany-Knedlik, 2020; Tillmann, 2021). These internal conflicts may shape *ex post* consequential and inconsequential meetings alike.

Table A6 in the online appendix displays estimates for several linear probability models.<sup>13</sup> In column 1, we check whether a number of different types of public statements during the quiet period correlates with policy changes at the corresponding monetary policy meeting. The counts of non-compliant statements in the current ( $t$ ) and the preceding ( $t - 1$ ) quiet period wield no predictive power for policy changes at the current policy meeting. However, the number of statements *declining* to comment on sensitive issues during the quiet period is positively associated with policy changes. Furthermore, quiet periods preceding policy changes saw fewer statements on non-sensitive topics (i.e. communication unrelated to future monetary policy and economic developments).<sup>14</sup> In columns 2–3 of Table A6, we draw on the binary measure for dissent at ECB policy meetings compiled by Tillmann (2021) as our outcome variable.<sup>15</sup> Only the number of statements declining to comment is positively correlated with dissent – and remains so even after we control for a dummy indicating meetings with policy changes (see column 3).

Overall, some specific categories of communication efforts during the quiet period seem to contain relevant information about the probability of policy changes and the consensual nature of pending policy decisions. Since we do not pin down causal relationships, the correlations we show in Table A6 should be treated with caution. Nonetheless, we find it enticing that policy-makers’ actual words (i.e. breaches) appear to matter much less in this context than their refusal to speak (i.e. statements declining to comment on sensitive topics).

## 4. Drivers of quiet period breaches

### 4.1. Economic and strategic motives

Why do ECB Governing Council members breach quiet period rules? A substantial part of the variation in quiet period discipline across committee members may be driven by idiosyncratic member-level characteristics. In addition, differential time trends could drive the observed cross-sectional heterogeneity in Fig. 2 as ECB Governing Council members serve for terms that are not synchronized across constituencies. In this paper, our main interest lies in identifying an economically interpretable “breach reaction function” that captures systematic relationships between variables relevant from the perspective of the ECB’s price stability mandate and members’ quiet period discipline. For this purpose, we purge the variation in breaching behavior from member-level idiosyncratic and time-specific trends by relying on member and year fixed effects. To measure relative macroeconomic conditions in each member state, we supplement our statement-level data with information from the ECB Statistical Data Warehouse to obtain monthly data on inflation, long-term interest rates and unemployment. Furthermore, we extract the volatility of the main national stock market index for each member country using Thomson Reuters Eikon. We apply the following linear probability framework to our pooled cross-sectional data of 991 recorded statements during monetary policy quiet periods:

$$B_{i,m,t} = M_m + y_t + \Gamma/E_{m,t} + \Delta/Q_t + \Lambda/S_{i,t} + u_{i,m,t} \quad (3)$$

In Eq. 3,  $B_{i,m,t}$  is a binary variable indicating that statement  $i$  issued by member  $m$  in quiet period  $t$  constitutes a breach of quiet period rules.  $M_m$  and  $y_t$  stand for member and year fixed effects. Vector  $E_{m,t}$  captures the following time-varying eco-

<sup>12</sup> Relevant summary statistics are provided in Table A5 of the online appendix.

<sup>13</sup> All results in Table A6 are robust to using a Probit model instead of the linear probability framework (see Table A7).

<sup>14</sup> The estimation sample only contains four policy meetings that resulted in monetary tightenings. Our findings continue to hold if we focus on changes that represented policy easings.

<sup>15</sup> To be able to cover all policy meetings until the end of 2021, we extend the series of dissent provided by Tillmann (2021).

conomic characteristics of members' constituencies: the absolute inflation deviation from the euro area inflation target<sup>16</sup>, the long-term interest rate spread relative to Germany, the absolute unemployment deviation from the euro area NAIURU<sup>17</sup> and the deviation of the current volatility of the national stock market index from the 12-month euro area moving average. Vector  $Q_t$  includes three count variables (number of breaches during the previous quiet period, number of statements declining to comment and number of statements on unrelated topics) and a dummy (indicating one of the quarterly projection releases at the upcoming Governing Council meeting<sup>18</sup>), all specific to quiet period  $t$ . Finally,  $S_{i,t}$  is a vector containing the following three statement-level covariates: a binary variable indicating statements targeted at members' domestic audiences, a dummy flagging statements representing pre-meditated, written speeches, and a variable counting the number of days between statement  $i$  and the date of the ECB press conference. Table A8 contains the summary statistics for our statement-level analysis.

Table 3 summarizes the regression results. We find that the long-term interest rate spread, and, even more so, the absolute inflation deviation from the euro area target represent relevant predictors of quiet period breaches at the statement-level. The unconditional probability that a given statement constitutes a quiet period breach amounts to 13.5% (see Table A8). Hence, the marginal effects of a standard deviation increase in the absolute inflation deviation and the interest rate spread are economically important: they range between 2–3 percentage points. Our within-year, within-member coefficient estimates suggest that ECB Governing Council members resort to quiet period breaches when the economic situation in their constituencies would favor a monetary stance that is tighter or looser than for the euro area as a whole. Furthermore, Table 3 shows that statements at the beginning of the quiet period are more likely to result in breaches than those issued just before the policy meeting. Based on this finding, we conjecture that part of the breaches may constitute unintentional violations of quiet period rules. These could have occurred either because members were not aware of the fact that the quiet period had already started or because pre-blackout statements were only published with a lag. Finally, pre-meditated, written speeches are also less likely to constitute breaches than more *ad hoc* statements (e.g. live interviews and press conferences). In the online appendix, we show that the coefficient on the inflation deviation remains a significant predictor if we re-estimate Eq. 3 by matching ECB executive board members with their respective country of origin data instead of (weighted) average data for the euro area as a whole (see Table A9). Our results are also robust to using conditional logistic regression instead of OLS (see Table A10).

Since we estimate the coefficients in Table 3 using statement-level data, we effectively model the factors influencing the propensity to breach the quiet period rules conditional on the prior decision of a Council member to issue a public statement. The results in Table 3 may therefore suffer from selection bias if some ECB Governing Council members systematically speak more often than others and their decisions to issue statements are correlated with unobserved factors in Eq. 3. To gauge the extent of potential selection dynamics into speaking, we compare our conditional statement-level results to coefficients obtained from member-level fixed effects regressions. Our member-level regressions are unconditional in the sense that they cover all members of the ECB Governing Council for each quiet period, including those who do not issue a public statement. The panel data structure also entails two additional advantages. First, the member-level data enable us to test whether committee members consider the three different categories of statements (i.e. breaches, statements declining to comment and statements on unrelated topics) as substitutes or complements during the quiet period. Second, member-level data provide an opportunity to go beyond binary measures of breaching behavior by analyzing the intensive margin of non-compliant statements.

Table A11 contains the summary statistics for our member-level analysis, including the regressions discussed in the next subsection. On average, members only issued 0.04 breaches across all member-quiet period observation pairs. The maximum number of violations attributed to one committee member during a single quiet period amounts to three. We adjust Eq. 3 in the following way to move our analysis to the member-level: in Eq. 4 below,  $NB_{m,t}$  stands for the number of breaches committed by member  $m$  in quiet period  $t$ ,  $QP_t$  is a quiet period fixed effect, and vector  $Q_{m,t}$  now covers the number of  $m$ 's statements declining to comment and the number of  $m$ 's statements on unrelated topics. Member-level fixed effects  $M_m$  and national deviations in macroeconomic conditions  $E_{m,t}$  remain as defined above.

$$NB_{m,t} = M_m + QP_t + \Gamma E_{m,t} + \Delta Q_{m,t} + u_{m,t} \quad (4)$$

The member-level regression results in Table 4 confirm our findings at the statement-level. Compared to the coefficient estimates in Table 3, the member-level results suggest a relatively more important role for the long-term interest rate spread. An additional insight from Table 4 is that statements declining to comment on sensitive topics and non-compliant statements appear to represent substitutes during the quiet period. This finding suggests that members aware of the quiet period, as indicated by their refusal to comment on policy-relevant questions, are also less likely to breach the ECB's blackout rules. In the online appendix, we show once more that our member-level results continue to hold if we match ECB executive board members with data for their countries of origin (see Table A12).

<sup>16</sup> For simplicity, we assume a euro area inflation target of 2% for the entire period. The results reported in this section remain qualitatively unchanged if we adjust the target to lower values slightly more reflective of the formulation "below, but close to 2%" which preceded the last ECB Strategy Review (Paloviita et al., 2021).

<sup>17</sup> We obtain estimates for the euro area NAIURU from the statistical appendix to the official Eurosystem macroeconomic projections.

<sup>18</sup> We experimented with alternative separate specifications, but we did not find any differential trends for Eurosystem's BMPE and the ECB's MPE projection releases.

**Table 3**  
Drivers of quiet period breaches (statement-level regressions).

Outcome: breach (binary)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inflation deviation	0.0262* (0.0150)				0.0252* (0.0151)	0.0266* (0.0152)	0.0281* (0.0150)
Long-term interest rate spread		0.0287*** (0.0106)			0.0251** (0.0124)	0.0233* (0.0127)	0.0200 (0.0127)
Unemployment deviation			0.0202 (0.0167)		0.0040 (0.0192)	0.0033 (0.0194)	0.0029 (0.0191)
Volatility deviation				0.0118 (0.0185)	0.0046 (0.0179)	0.0006 (0.0180)	0.0031 (0.0180)
Breaches during previous quiet period						-0.0121 (0.0078)	-0.0109 (0.0078)
Statements declining to comment						-0.0050 (0.0115)	-0.0058 (0.0114)
Statements on unrelated topics						-0.0038 (0.0028)	-0.0042 (0.0028)
Projection release						0.0089 (0.0235)	0.0111 (0.0234)
Domestic audience							-0.0406 (0.0252)
Prepared speech							-0.0407* (0.0232)
Days to meeting							0.0093* (0.0050)
Observations	991	991	991	991	991	991	991
R-squared	0.2168	0.2160	0.2148	0.2143	0.2188	0.2233	0.2302
Member FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Heteroskedasticity-robust Huber–White standard errors in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

This table summarizes the estimation results for statement-level linear regression models predicting the probability that a given public statement breaches euro area quiet period rules. The sample covers the period between October 2008 and December 2021. All macroeconomic variables are standardized. Hence, their marginal effect represents the outcome's response to a standard deviation increase in the covariate. The variables capturing inflation, unemployment and volatility deviations represent deviations of the issuing member's constituency from euro area targets or longer-run, moving averages. For ECB executive board members, the deviations are based on differences between contemporary euro area-wide data and euro area targets or longer-run, moving averages.

**Table 4**  
Drivers of quiet period breaches (member-level regressions).

Outcome: breaches (count)	(1)	(2)	(3)	(4)	(5)	(6)
Inflation deviation	0.0094* (0.0052)				0.0095* (0.0052)	0.0098* (0.0052)
Long-term interest rate spread		0.0149*** (0.0055)			0.0139** (0.0063)	0.0140** (0.0062)
Unemployment deviation			0.0106 (0.0075)		0.0012 (0.0069)	0.0017 (0.0070)
Volatility deviation				0.0061 (0.0059)	0.0041 (0.0051)	0.0037 (0.0051)
Statements declining to comment						-0.0536** (0.0226)
Statements on unrelated topics						0.0144 (0.0110)
Observations	3,102	3,102	3,102	3,102	3,102	3,102
Number of GovC members	68	68	68	68	68	68
R-squared	0.0904	0.0910	0.0902	0.0900	0.0920	0.0942
Member FE	Yes	Yes	Yes	Yes	Yes	Yes
Quiet period FE	Yes	Yes	Yes	Yes	Yes	Yes

Clustered standard errors (at member-level) in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

This table summarizes the estimation results for member-level panel fixed effects regressions. The dependent variable is the number of quiet period breaches committed by each ECB Governing Council member in every quiet period between October 2008 and December 2021. All macroeconomic variables are standardized. Hence, their marginal effect represents the outcome's response to a standard deviation increase in the covariate. The variables capturing inflation, unemployment and volatility deviations represent deviations of the issuing member's constituency from euro area targets or longer-run, moving averages. For ECB executive board members, the deviations are based on differences between contemporary euro area-wide data and euro area targets or longer-run, moving averages.

Finally, Table A13 in the appendix replicates our statement- and member-level results with an additional explanatory variable capturing dissent at the upcoming policy meeting (based on Tillmann (2021) as explained in Section 3 above). We report these results separately from Tables 3 and 4 above because we do not observe the status of dissent for each meeting and because we need to modify the member-level estimation equation to be able to include the dissent dummy (i.e. using year fixed effects instead of quiet period fixed effects). Table A13 shows that dissent at the upcoming meeting is indeed positively correlated with the propensity of breaching the quiet period at the statement-level and at the member-level. Yet, the coefficient for the dissent dummy is not statistically significant in any of our specifications. Moreover, the inclusion of the dissent dummy does not change our main results shown in Tables 3 and 4 above.

#### 4.2. Rotational voting and the quiet period

In this subsection, we exploit a natural experiment to shed light on the question of whether strategic communication during the quiet period functions as a substitute for or as a complement to the formal right to vote at monetary policy meetings. Since 1 January 2015, the Eurosystem takes monetary policy decisions using a rotational voting scheme. The scheme splits Governing Council members into three separate groups. First, ECB Executive Board members are not subject to the rotational system as they always bear the right to vote. Hence, we exclude ECB executive board members from our analysis in this subsection. Second, national central bank governors representing France, Germany, Italy, the Netherlands and Spain make up one rotational voting group (voting group 1). Governing Council members from this group have the right to vote for four months in a row before pausing for one month. Voting rights are distributed among this group such that four of the five member states vote during each ECB Governing Council meeting. The third category of members is composed of all other national central bank governors (voting group 2). Members of this group vote for eleven months in a row before pausing for three consecutive months.<sup>19</sup>

We draw on the set-up of the Eurosystem's rotational voting scheme to investigate whether members without a voting right at a given policy meeting breach quiet period rules more often or generally communicate more than voting members – a question also raised, but not yet answered by Bennani and Neuenkirch (2017).<sup>20</sup> To identify the causal effect of the rotational voting scheme on individual members' incentives to communicate during the quiet period, we exploit the fact that the rotational schedule first set out in 2014 pre-determined which national central bank governors are allowed to vote in monetary policy meetings ever since. To understand this point, consider the example of the President of the Deutsche Bundesbank, a member of the voting group containing the largest euro area economies. In the first rotational schedule ever published, the Bundesbank President received the right to vote during the first four months of 2015. Given the fixed sequence of four voting months followed by a pause of one month, the initial voting schedule pre-determined the voting cycle for the Bundesbank President ever since.

Since the voting schedule is perfectly pre-determined, the variation in voting rights over time is plausibly orthogonal to economic developments and monetary policy debates since 2015. The exogeneity of voting is crucial for our econometric strategy because individual members' incentives to breach the quiet period are likely correlated with the intensity of monetary policy debates and the contemporary state of the euro area economy.<sup>21</sup> We draw on Eq. 5 to estimate the effect of rotational voting on quiet period discipline:

$$NB_{m,t} = \beta T_{m,t} + \kappa(T_{m,t} \times VG_m) + M_m + QP_t + \Gamma' \mathbf{E}_{m,t} + \Delta' \mathbf{Q}_{m,t} + u_{m,t} \quad (5)$$

$T_{m,t}$  represents our treatment of interest, a binary variable flagging all members who do not bear the right to vote at the policy meeting directly following quiet period  $t$ . We also interact treatment with members' voting group to allow for flexible treatment coefficients for the two groups of countries.  $VG_m$  is a dummy for member states in voting group 2 (i.e. all countries except France, Germany, Italy, the Netherlands and Spain). All other vectors and covariates are defined as in Eq. 4 above. To be sure, some country-specific characteristics may remain systematically correlated with voting rights, not least because Governing Council members from particularly large member states only pause once every five months. The division of Governing Council members into different voting groups is based on the relative economic and financial weight of their economies in the euro area. Our member fixed effects  $M_m$  address this concern.

We report our estimation results in Table 5.<sup>22</sup> The dependent variable in columns 1–3 is the number of breaches by member  $m$  in quiet period  $t$ . Columns 4–6 display additional coefficient estimates for the total amount of quiet period communication (i.e. the sum of compliant and non-compliant statements by member  $m$  in quiet period  $t$ ) on the left-hand side of Eq. 5. For breaches, the results convey a clear message. We find no evidence indicating that non-voting members of the ECB Governing

<sup>19</sup> Since the rotation is organized according to months rather than Governing Council meetings, the Eurosystem's rotational voting scheme does not guarantee that members get to vote an equal number of times per year (even within the same voting group).

<sup>20</sup> We account for the fact that the start of the quiet period and the meeting might fall into different months. We always match members with the voting rights they bear in the month of the meeting.

<sup>21</sup> In contexts where members' voting rights are permanent but abstention is possible, e.g. in national parliaments or the European Parliament, representatives are more prone to use their right to vote whenever subject matters are particularly controversial or important for their individual agenda (Hix et al., 2007).

<sup>22</sup> Our sample size is reduced relative to the correlational regressions in the previous subsection. On the one hand, we can only include statements made after 1 January 2015 when the rotational voting scheme was first introduced. On the other hand, ECB Executive Board members are dropped from the estimation sample as they always bear the right to vote.

**Table 5**

The impact of rotational voting on quiet period communication.

	(1) Breaches	(2) Breaches	(3) Breaches	(4) All statements	(5) All statements	(6) All statements
Treatment (no voting right)	-0.0161 (0.0184)	-0.0287 (0.0521)	-0.0261 (0.0548)	-0.0499** (0.0223)	-0.0543 (0.0372)	-0.0539 (0.0372)
Treatment × NCB voting group 2		0.0169 (0.0541)	0.0124 (0.0581)		0.0059 (0.0459)	0.0033 (0.0462)
Inflation deviation			0.0116 (0.0081)			0.0099 (0.0163)
Long-term interest rate spread			0.0157 (0.0226)			0.0484 (0.0539)
Unemployment deviation			-0.0057 (0.0250)			-0.0225 (0.0545)
Volatility deviation			0.0112 (0.0137)			-0.0033 (0.0188)
Statements declining to comment			0.0804 (0.1333)			
Statements on unrelated topics			0.0277 (0.0379)			
Observations	1,065	1,065	1,065	1,065	1,065	1,065
Number of GovC members	38	38	38	38	38	38
R-squared	0.0869	0.0871	0.0921	0.1115	0.1115	0.1125
Member FE	Yes	Yes	Yes	Yes	Yes	Yes
Quiet period FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered standard errors (at member-level) in parentheses. *p<0.1; **p<0.05; ***p<0.01						

This table summarizes the estimation results for member-level panel fixed effects regressions. The dependent variable in columns 1–3 is the number of quiet period breaches committed by each ECB Governing Council member in every quiet period between January 2015 and December 2021. In columns 4–6, the outcome variable represents the total number of communication efforts (compliant and non-compliant statements) by the member during quiet periods. The sample only covers the period starting after 1 January 2015, when the ECB's rotational voting scheme was first introduced. Moreover, the estimation sample does not include ECB executive board members because they always bear the right to vote. All macroeconomic variables are standardized. Hence, their marginal effect represents the outcome's response to a standard deviation increase in the covariate. The variables capturing inflation, unemployment and volatility deviations represent deviations of the issuing member's constituency from euro area targets or longer-run, moving averages. NCB voting group 1 (ES, FR, GER, IT, NL) represents the base category for the treatment interaction in columns 2, 3, 5 and 6.

Council are more likely to enter into conflict with quiet periods rules. This conclusion also holds when we interact our treatment variable with the voting group dummy. One plausible explanation for this result is that non-voting members also participate in Governing Council meetings where they can make themselves be heard during the discussion. Our findings are thus consistent with the conventional interpretation of the ECB Governing Council as a collegial, consensus-seeking decision-making body. Turning to total communication efforts, we find some evidence that non-voting status causes the intensive margin (i.e. the number of times members communicate in the quiet period) to fall relative to members bearing voting rights (see column 4 in Table 5). ECB Governing Council members appear to engage less with the media and the public debate when they do not actively take part in the voting process. This suggests that overall communication during the quiet period and voting rights may be complements rather than substitutes.<sup>23</sup> We note, however, that while the size of this treatment effect remains fairly constant once we include our interaction term with voting group 2, it is much less precisely estimated.

A worry related to our finding in column 4 of Table 5 is that our identification strategy may not suffice to adequately distinguish between the supply and demand for public statements by Governing Council members during the quiet period. It may well be that members who currently hold voting rights are in higher demand for interviews and speeches than their non-voting peers. In this case, we might misinterpret a negative treatment coefficient as evidence showing that non-voting members have fewer incentives to talk during the quiet period. To rule out the possibility of a spurious correlation, we directly test whether the demand for non-voting members' media appearances is lower than for their voting peers. For this purpose, we encode all entries of national central bank governors' individual calendars since January 2019, when these entries were first published in a systematic manner on national central banks' websites. The official calendars contain information on all internal and external meetings (including meetings with media and press conferences) in which a given Governing Council member participated. Table A14 in the online appendix summarizes the corresponding estimation results. In columns 1 and 2, we regress the number of member  $m$ 's relevant calendar items in a given quiet period (i.e. speeches, active panel participation, press conferences and other media meetings) on the right-hand side of Eq. 5. Columns 3–4 repeat this exercise for member  $m$ 's total number of calendar entries (all relevant items plus internal meetings and passive conference attendances). We find no evidence that non-voting members receive less media attention.

<sup>23</sup> A less benign interpretation may be that lower counts simply mean non-voting members engage less frequently with the public and tend to free-ride on their voting peers.

## 5. Conclusion

In this paper, we use confidential data to provide an empirical primer on the ECB's monetary policy quiet period between 2008 and 2021. Breaches of blackout rules happen regularly and their frequency varies across time and across ECB Governing Council members. Drawing on high-frequency financial market data, we show that quiet period breaches trigger market reactions that are up to more than twice as large as the median market reaction to speeches in inter-meeting periods. Moreover, controlling for member and time fixed effects, we find that breaches respond to the absolute inflation deviation in policy-makers' constituencies from the ECB's target and to interest rate spreads inside the euro area. Finally, we also exploit plausibly exogenous variation in the ECB's rotational voting schedule to show that non-voting members do not engage in strategic communication during the quiet period to lock in their voting peers.

Our study sheds new light on the time trends, the cross-sectional heterogeneity, the impact and the drivers of monetary policy-makers' *attributable* communication efforts during the ECB's quiet period. Yet, more recently, mounting dissent within the ECB Governing Council during the second half of the 2010s (Claeys and Linta, 2019; Tillmann and Walter, 2019; Tillmann, 2021) also appears to have given rise to an increased frequency of *non-attributable* monetary policy leaks (also called "sources stories"). In spring 2022, ECB President Lagarde even called on other Governing Council members to hold back individual views until several days after the ECB press conference and to not leak details of the internal discussion to the press.<sup>24</sup> To establish a complete picture of the causes and consequences of sensitive communication in the run-up to monetary policy meetings, future research on sources stories would be important to complement our insights in this paper and to analyze possible interactions with decision-makers' attributable statements.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Online Appendix A

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.jimonfin.2022.102744>.

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<sup>24</sup> See Koranyi and Canepa (2022). Lagarde tells ECB policymakers to hold back criticism, leaks. Reuters News Europe, 22 April 2022.

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