The Sound of Silence: Policy Signals and Risk Premia

: Measuring the "Unsaid" in FOMC Communications with AI Language Models

Gayeon Hong [1]

[1]Dept. of Economics, Seoul National University

Paper Link

Motivation & Overview

- **Motivation.** Existing text measures focus on additions, tone, and sentiment. This paper studies the subtractive margin: what policy language disappears. (Negative Information)
  Related Literatures: Loughran–McDonald (2011); Hansen–McMahon (2016).
- **Central idea.** The Federal Reserve communicates not only through what it says, but also through what it silently withdraws.
- **Finding.** Omitted FOMC language is priced mainly through term premia, especially when accommodative guidance is withdrawn.

Example of Sequential Statements

Table 1. Omitted Language in FOMC Statements and Market Interpretation

Event 1: Oct'14 → Dec'14 — **Signal: (+) Hawkish**

Previous Statement: D_{t-1}	Current Statement: D_t
...maintain the target range for a ~~considerable time~~ following the end of its asset purchase program this month...	...judges that it can be **patient** in beginning to normalize the stance of monetary policy...

Event 2: Dec'22 → Mar'23 — **Signal: (−) Dovish**

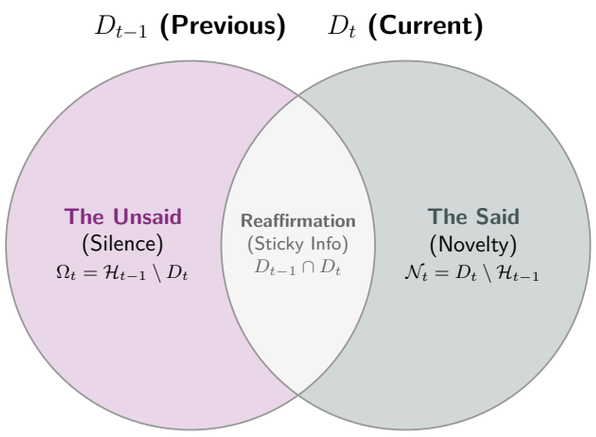
Previous Statement: D_{t-1}	Current Statement: D_t
...anticipates that ~~ongoing increases~~ in the target range will be appropriate in order to attain a stance of monetary policy that is sufficiently restrictive...	...anticipates that **some additional policy firming** may be appropriate in order to attain a stance of monetary policy that is sufficiently restrictive...

Note: Red strikethrough denotes omitted language from D_{t-1}. Blue denotes newly realized language in D_t. Each event represents a transition $D_{t-1} \to D_t$ where the omitted set is $\Omega_t = \{s \in \mathcal{H}_{t-1} : \max_{s' \in D_t} \rho(s, s') < \theta\}$.

Conceptual Framework: What Is Silence?

Silence: Previously repeated policy language that the Fed stops saying.

Figure 1. Dynamic Sequential Decomposition



Note: FOMC narratives are treated as a sequence, not independent documents.

Sequential Structure of FOMC Communication

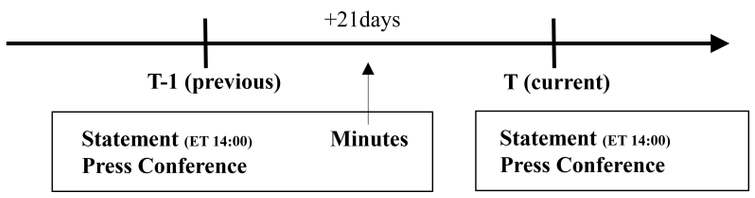


Table 2. Evolution of FOMC Communication Architecture (1999–2025)

Regime period	Statement release	Press conference	Minutes release
2000–2010 (Pre-Press)	14:15 ET	None	$t + 21$ days, 14:00
2011–2018 (Transition)	14:00 ET	14:15 / 14:30 (Quarterly)[a]	$t + 21$ days, 14:00
2019–Present (Current)	14:00 ET	14:30 (Every meeting)	$t + 21$ days, 14:00

Measurement

- **Sequential expectation set.** Recurring language from recent meetings forms $\mathcal{H}_{t-1}$, the set of policy concepts expected to remain salient.
- **Semantic matching.** Sentence embeddings distinguish true omission from simple rephrasing by comparing $\mathcal{H}_{t-1}$ with the current statement D_t.
- **Directional score.** Omitted language is weighted by stance and salience to construct Silence_t, Silence_t^+, and Silence_t^-.

Identification via Semantic Filtering

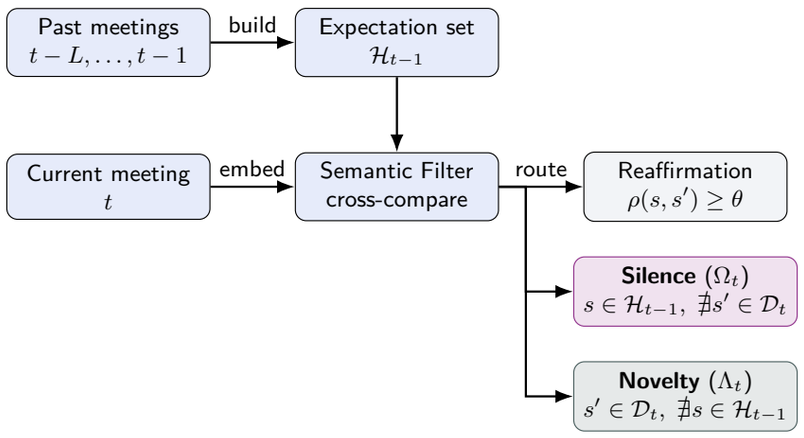


Figure 2. Semantic filtering removes simple rephrasing from the Silence measure.

Measurement: Semantic Silence and Novelty

Step 1. Build expected language from recent history

$$\mathcal{H}_{t-1} = \left\{ s_{j,k} : j \in \{t - L, \ldots, t - 1\},\ w(s_{j,k}) \geq \underline{w} \right\}, \qquad L = 3.$$

Robust to $L \in \{3, 4, 5\}$ and $\theta \in \{0.55, 0.65, 0.75\}$.

Step 2. Embed and semantically match

$$\rho(s, D_t) = \max_{s' \in D_t} \cos\{e(s), e(s')\},$$

$$m_t(s) = \mathbf{1}\{\rho(s, D_t) \geq \theta\}.$$

Stable across alternative embedders: FinBERT and RoBERTa-base; robust to statement-only windows pre-2011 and excluding crisis episodes.

Step 3. Route language into Silence and Novelty

$$\Omega_t = \{s \in \mathcal{H}_{t-1} : m_t(s) = 0\},$$

$$\Lambda_t = \left\{ s' \in D_t : \max_{s \in \mathcal{H}_{t-1}} \cos(e(s'), e(s)) < \theta \right\}.$$

$$\text{Silence}_t = \sum_{s \in \Omega_t} \underbrace{(-\sigma_s)}_{\text{withdrawn stance}} \underbrace{\omega_s}_{\text{frequency} \times \text{salience}}, \qquad \text{Novelty}_t = \sum_{s' \in \Lambda_t} \omega_{s'} \sigma_{s'}.$$

$$\boxed{\text{Silence}_t^+ = \sum_{\substack{s \in \Omega_t \\ \sigma(s) < 0}} |\sigma(s)| w(s), \qquad \text{Silence}_t^- = \sum_{\substack{s \in \Omega_t \\ \sigma(s) > 0}} \sigma(s) w(s)}$$

- Silence_t^+: tightening via withdrawal of accommodative language.
- Silence_t^-: easing via withdrawal of restrictive language.

"The dog did nothing in the night-time."
"That was the curious incident," remarked Sherlock Holmes.

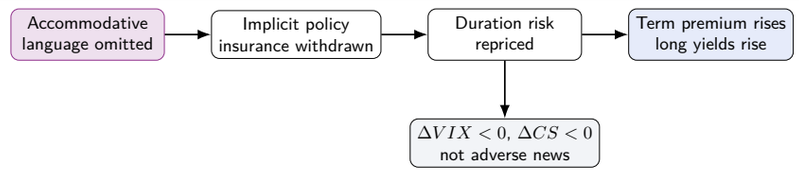
The absence of expected language can itself be informative.



Asset-Pricing Implications

- **Silence is priced.** A one-standard-deviation increase in Silence is associated with a 3–5bp rise in longer-maturity Treasury yields.
- **The channel is risk premia.** Silence loads primarily on term premia rather than the risk-neutral expected short-rate path.
- **Asymmetry.** Repricing is strongest when accommodative guidance is withdrawn.

Mechanism and Takeaway



Result I — Silence Reprices Term Premia

- Empirical Specification.

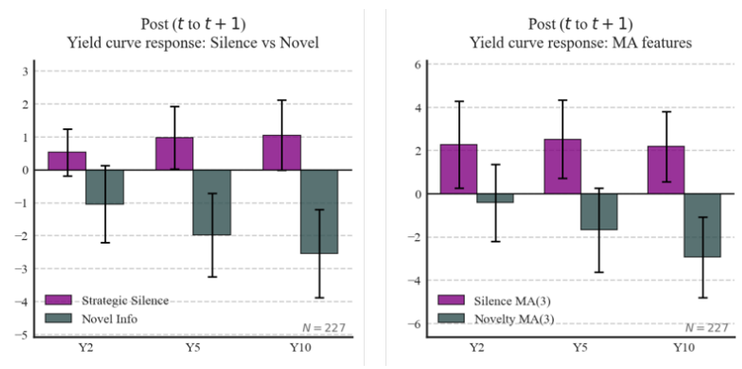
$$Y_{t,h} = \alpha_h + \boxed{\beta_h^S}\ \text{Silence}_t + \beta_h^N \text{Novelty}_t + \Gamma_h X_t + \varepsilon_{t,h}.$$

High-frequency ID uses a 100-min FOMC window (13:50–15:30 ET). Yields are decomposed as $y_t^{(10)} = rn_t^{(10)} + tp_t^{(10)}$.

	Level / Baseline				Event Window $[-1, +1]$			
	$tp2$	$tp10$	$rn2$	$rn10$	$\Delta y2$	$\Delta y10$	ΔCredit	ΔVIX
Silence (MA3)	**0.27*****	**0.73*****	-0.53^{*}	-0.31	**4.24****	**3.39*****	-2.16^{**}	-2.45^{*}
	(4.57)	(5.76)	(-1.77)	(-1.64)	(2.28)	(2.67)	(-2.19)	(-1.75)
Novelty (MA3)	0.11	0.23	0.17	0.09	0.02	-2.86^{**}	-0.29	-1.73
	(1.42)	(1.11)	(0.49)	(0.39)	(0.01)	(-1.98)	(-0.18)	(-1.57)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
N	209	209	209	209	227	227	227	227

Note: Left: level regressions. Right: $[-1, +1]$ FOMC-window responses. HAC t-statistics in parentheses. Red cells mark the pooled Silence signature.

Figure 3. Yield responses to Silence and Novelty around FOMC announcements.



- **Main channel:** Silence is priced through term premia, not rate expectations.
- **Market interpretation:** Yields rise while VIX and credit spreads decline, consistent with withdrawn policy insurance.

Result II — Dropped Dovish Guidance (Pivot Signal)

- Empirical Specification: State dependence.

$$Y_{t,h} = \alpha_h + \boxed{\beta_h^+\ \text{Silence}_t^+ + \beta_h^-\text{Silence}_t^-} + \theta_h \text{Novelty}_t + \Gamma_h X_t + \varepsilon_{t,h}.$$

	Yield Response		Term-Premium Response		Risk Sentiment	
	$\Delta y2$	$\Delta y10$	$\Delta tp2$	$\Delta tp10$	ΔCredit	ΔVIX
Panel A: Silence^- *— Fading Restriction*						
Silence (MA3)	0.24	-1.61	-0.42	-3.28^{*}	0.95	0.22
	(0.10)	(-0.90)	(-0.39)	(-1.76)	(0.53)	(0.11)
Novelty (MA3)	-0.29	-1.66	-0.99	-1.84	3.41^{*}	-4.86^{**}
	(-0.16)	(-0.86)	(-0.98)	(-1.06)	(1.84)	(-2.51)
Panel B: Silence^+ *— Fading Accommodation*						
Silence (MA3)	**8.05*****	**6.53*****	**4.29*****	2.04	-2.95^{**}	-5.21^{**}
	(2.93)	(3.37)	(2.92)	(0.94)	(-2.22)	(-2.08)
Novelty (MA3)	-0.22	-3.74^{**}	-1.85^{*}	-5.62^{***}	-1.33	-0.67
	(-0.17)	(-2.22)	(-1.93)	(-2.78)	(-0.85)	(-0.48)
N, Silence^-	61	61	58	58	61	61
N, Silence^+	166	166	151	151	166	166

Note: $[-1, +1]$ FOMC-window responses split by Silence direction. HAC t-statistics in parentheses. Red cells mark the Silence^+ signature.

- **Interpretation:** Dropping dovish guidance raises yields and short-maturity term premia while reducing VIX and credit spreads.

gayeon@snu.ac.kr