Bond Market Response to FOMC Communication: Overreaction and Diagnostic Expectations

Shreeyesh Menon*

Abstract

Since 2004, the Federal Reserve has released the minutes of Federal Open Market Committee (FOMC) meetings three weeks after each policy announcement, providing a natural setting to study how financial markets process sequential policy signals. This paper examines how the yield curve responds to both FOMC announcements and the subsequent release of meeting minutes. Using high-frequency identification, I extract monetary policy shocks and decompose them into target rate, forward guidance, and yield-curve “twist” components. I document a systematic overreaction of yields to the forward guidance component of announcements, followed by a partial reversal when the corresponding minutes are released. I interpret this pattern through a model of diagnostic expectations, in which investors initially overweight salient forward guidance signals and later revise their beliefs as additional context becomes available in the minutes.

*The University of Texas at Austin, 2225 Speedway, Austin, Texas-78703, Email:shreeyeshmenon@gmail.com

1 Introduction

Beginning in December 2004, the Federal Open Market Committee (FOMC) began releasing the minutes of its meetings approximately three weeks after each policy decision. These minutes have since become a key source of monetary policy information, offering detailed insights into the Committee's economic outlook, risk assessments, and policy deliberations. They allow market participants to refine their understanding of the policy stance and form expectations about future actions. For instance, on May 25, 2022, CNBC reported that "Fed minutes point to more rate hikes that go further than the market anticipates," referring to the minutes of the May 4 meeting released earlier that day.

While an extensive literature examines the financial market response to FOMC announcements and statements, the information content of the minutes—and how it interacts with that of announcements—has received far less attention. The staggered release of information by the FOMC provides a natural setting to study how markets process and update expectations as additional details about policy deliberations become public.

This paper aims to shed light on what I call the "FOMC minutes effect": the incremental and corrective influence of minutes on the yield curve following an announcement. Using high-frequency Treasury yield changes around policy events, I identify monetary policy shocks associated with both announcements and minutes. Applying principal component analysis, I isolate the components of these shocks corresponding to target rate, forward guidance, and balance-sheet ("twist") factors. The evidence suggests that markets tend to overreact to the forward guidance component of announcements and subsequently adjust after the release of minutes. I interpret this pattern through the lens of a noisy-information model with diagnostic expectations, where agents initially overweigh salient signals in the form of FOMC announcements and later revise beliefs as more detailed policy information becomes available upon the release of the minutes.

2 Previous literature

The present work borrows insights from the literature on high-frequency identification of monetary policy shocks pioneered by Kuttner (2000) and more closely to work by Gurkaynak et al. (2004) (henceforth GSS) as well as Swanson (2021). These papers establish high-frequency shifts in asset prices as important tools for the identification of monetary policy shocks. Broadly, these studies use shifts in Fed funds futures in a 30-minute window around monetary policy announcements to measure the shock. I use a variant of Swanson (2021)'s method for identification of the components of monetary policy shocks in this paper.

Now I turn to literature specifically looking at the effects of FOMC minutes on asset prices. Jegadeesh and Wu (2015) find evidence that the language of the minutes contain information above and beyond the announcement that is relevant to financial markets. Nechio and Wilson (2016) also make use of text analysis to find that impact of minute releases on asset prices are largest when the "tone" of the minutes differs from that of the announcement, thus relaying more additional information. Among the high-frequency identification literature Rosa (2013) studies the volatility of asset-prices around a 30-minute window around the release of FOMC minutes and finds them to be significantly different from non-event days. However, while these studies show that minutes-day effects are significant, they do not study what kind of information financial market participants actually glean from them. They do not address how the minutes are informative over and beyond the announcements and whether there is any link between how financial markets respond to these two modes of Fed communication.

This paper also invokes ideas from a strand of literature studying forecast revisions and forecaster irrationality. Beginning with Coibion and Gorodnichenko (2012) (CG henceforth), several papers (Kohlhas and Walther (2021), Bordalo, Gennaioli, Ma and Shleifer (2020), Angeletos, Huo and Sastry (2021)) address the problem of irrational behavior in forecast revisions on receiving macroeconomic news. Coibion and Gorodnichenko (2012) regress forecast revisions upon receiving information about macroeconomic variables on the forecast errors defined as the difference between the true value known in the future to understand how agents depart from Full Information Rational Expectations (FIRE). They find that for inflation and several other macro variables, consensus forecasts under-react relative to FIRE. Bordalo, Gennaioli, Ma and Shleifer (2020) (henceforth - BGMS) find evidence for consensus-level overreaction and individual-level under-reaction to news among forecasters. Within this paper, I model the response of bond market participants to FOMC announcements and minutes in the same spirit and address the broad patterns observed.

3 Measuring Monetary Policy Shocks

Around a monetary policy event, information is conveyed to private-sector agents that causes them to revise their assessment of the stance of policy. In this paper, shocks are measured based on shifts in the yield curve in a 1-day window[1] around the event. I use a longer window than the traditional 30-minutes to allow for the market to completely interpret and respond to the information contained in the announcements as well as minutes. Rosa (2013) documents that the absorption of news is more prolonged, taking roughly one hour and thirty minutes, compared with the time associated with the release of the FOMC minutes. Using a one-day window is consistent with GSS's finding that a one-day window is sufficient for the identification of shifts in monetary policy behavior. Let the shift in yields at maturity j around a monetary policy event be given by Δy^j:

$$\Delta y^j = \Delta y^j_{mp} + \varepsilon^j \tag{1}$$

where Δy^j_{mp} denotes the component of the change in the yield corresponding to systematic bond-market response to monetary policy, which is observed with some noise or measurement error ε^j. The noise is due to stray movements in the yield curve that are unrelated to monetary policy. The ratio of variance of the component attributable to monetary policy Δy^j_{mp} to that of the noise ε represents the signal-to-noise (SNR) ratio. This ratio is indicative of the degree of informativeness of the noisy signal Δy^j.

3.1 The Quantum of Information in FOMC minutes

If shifts in the yield curve around the release of information by the FOMC carry substantial information, one would expect the variance of these shifts to be larger than those around regular days (not corresponding to any monetary news). To test this, a one-tailed F-test of variances is conducted for shifts in yields across maturities (ranging from 1-month to 10-years) testing the alternate hypothesis of larger variance of changes around monetary policy events as compared to non-event days (reported in Appendix B. I find that during FOMC announcement days, shifts in yields across all but one maturity (1-year) have larger variance, and the null of equality of variance is rejected.

On the days corresponding to the release of FOMC minutes, the null of equal variance is not rejected across maturities. Essentially, the test does not find that shifts in the yield curve are larger in magnitude on minutes-days than on regular days with no news. This test indicates that the systematic bond-market response to minutes, if there is any response at all, is too small to tell apart from the noise. The minutes effect seems to be much smaller than the announcement effect.

[1] closing 1-day after the event minus closing 1-day before

This is not surprising, since most of the information contained would be common and revealed three weeks prior. The minutes do not seem to contain large independent signals relevant for the bond markets.

3.2 Identification of monetary policy shocks

Identification of the shocks borrows from Swanson (2021). Shifts in the yield curve at k maturities in a secular 1-day window around monetary policy event (FOMC announcement or minutes release) are collected into a $T \times k$ matrix X.[2]

Through Principal Component Analysis (PCA), monetary policy shocks, the shifts in the yield curve are decomposed into principal components. Swanson (2021) finds evidence that three dimensions are important to capture monetary policy shocks in the post-GFC period. The matrix X is first standardized so that all columns have zero mean and unit variance. PCA of the standardized matrix X yields the factorization

$$X = F\Lambda + \varepsilon \tag{2}$$

F is a $T \times 3$ matrix of the three factors extracted by PCA. Λ is the matrix of factor loadings on the maturities.

This factorization is not unique and indeed, these factors do not uniquely capture the three components of monetary policy. We can see this by considering any rotation with orthogonal matrix U yielding $\tilde{F} = FU$ and $\tilde{\Lambda} = U'\Lambda$. Following a similar approach as Swanson (2021), the factors are identified as the current fed funds rate factor, the forward guidance factor and the LSAP or "twist" factor using three identifying restrictions:

- the current Fed funds factor only has a non-zero effect at the 1-month maturity
- the forward guidance and twist factors have no effect on the 1-month maturity
- the twist factor has a positive loading on yields up to a certain maturity and negative loading on longer maturities

[2]The window begins at the market-close of the preceding day ends at market-close the following working day.

The first two restrictions are intuitive: since forward guidance is defined as the component of policy that is relevant to the future path of policy, they are assumed to have no effect on the "current" interest rates. The same logic applies to the LSAP component. The Fed's purchase of long-term securities is aimed at lowering the long-term yields when the fed funds rate is "stuck" at the Zero Lower Bound. The current Fed funds rate (FFR) component of a monetary policy shock is simply the change in the 1-month yield in the event-window. The current FFR component is set to zero for minutes-shocks since they do not concern changes in the short-term nominal interest rates.

The last restriction implies that the LSAP operates by rebalancing the Fed's portfolio across medium- and long-run maturities. Swanson (2021) identifies this in a slightly different way, imposing that the factor be as small as possible over the non-ZLB period. I find that identifying the factor that way yields very similar shock-series, particularly because the Fed mainly engaged in the portfolio re-balancing during the ZLB period. However, I find the interpretation of the LSAP factor having a "twisting" effect on the yield curve as a more intuitive way to think about this third factor.

Table 1: Factor Loadings

Maturity	Current FFR	Forward Guidance	LSAP (Twist)
1m	0.1196	0.0000	0.0000
3m	0.0000	0.0212	0.0517
6m	0.0000	0.0190	0.0311
1y	0.0000	0.0225	0.0165
2y	0.0000	0.0307	0.0001
3y	0.0000	0.0335	-0.0096
5y	0.0000	0.0359	-0.0211
7y	0.0000	0.0353	-0.0271
10y	0.0000	0.0322	-0.0299
30y	0.0000	0.0247	-0.0298

Notes: Entries are factor loadings for different maturities. All values reported to four decimal places.

4 What information do minutes convey?

Now I turn to the question of whether the minutes contain additional information over and above the announcement that is relevant to the financial markets. Since the minutes signal corresponds to the same FOMC meeting, it must contain similar information as the FOMC announcement. Under Full-information Rational Expectations, the "minutes shock" as measured by changes in the yield curve around the release of FOMC minutes would not be predictable based on any prior publicly available information. We can test this implication of FIRE by testing for a relationship between the components of announcement shocks and the corresponding minutes shocks. The Fed began the release of its Survey of Economic Projections after October 2007. Since that can change the transmission of information, I restrict the regression analysis to the 2008-2024 sample period. However, I find that the findings are robust to keeping the whole sample period or restricting to post-2011 sample which is when the Fed chair began to hold a press conference immediately following FOMC announcements. None of these factors seem to have major effects on the main results reported.

In Figure 1, I plot the forward guidance component of the announcement shock against the corresponding minutes shock for each FOMC meeting in the sample. Table 2 reports the result of the regression.

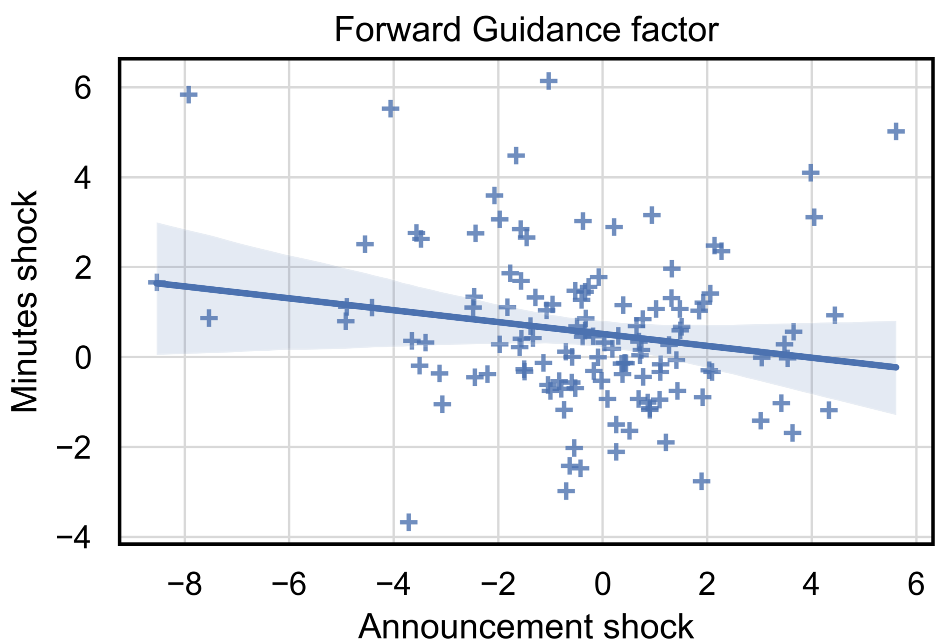

Figure 1: Forward guidance factor: Negative relationship between announcement- and minutes-day responses

Table 2: Regressing minutes shocks against corresponding announcement shocks: Forward Guidance factor

	$mps^{FG}_{t,min}$
Constant	0.1114***
	(0.167)
$mps^{FG}_{t,ann}$	-0.1778***
	(0.060)
Observations	77
R-squared	0.073
Adj. R-squared	0.061
F-statistic	8.846
Durbin–Watson	2.207

Notes: Robust standard errors (HAC, 4 lags) in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The results are indicative of a statistically significant, negative relationship between the forward guidance component of the announcement and minutes shocks. This prompts a rejection of Full Information Rational Expectations (FIRE) since under FIRE, shifts in the yield curve should be uncorrelated with all past information. Rather, the results show that agents systematically *overreact* when interpreting the forward guidance in the FOMC announcements and backpedal once the minutes are released. Looking at the effects on individual maturities (shown in Appendix A), a similar pattern is revealed, with medium-term yields showing a pattern of overreaction.

For the twist component, the minutes and announcement day effects are uncorrelated (see Figure 2 and Table 3). Since the quantum of Fed asset purchases and portfolio re-balancing is revealed during the announcement itself, one would not expect the minutes to carry much information relevant to the long-term yields (assuming that changes in liquidity and term premia are of small magnitude). The forward guidance stance however, is not clearly revealed by the announcement, since it requires greater understanding of the factors that would weigh on policymakers' deliberations in the short-run. Hence the information contained in FOMC minutes would be particularly relevant to understand the direction of policy in the near future.

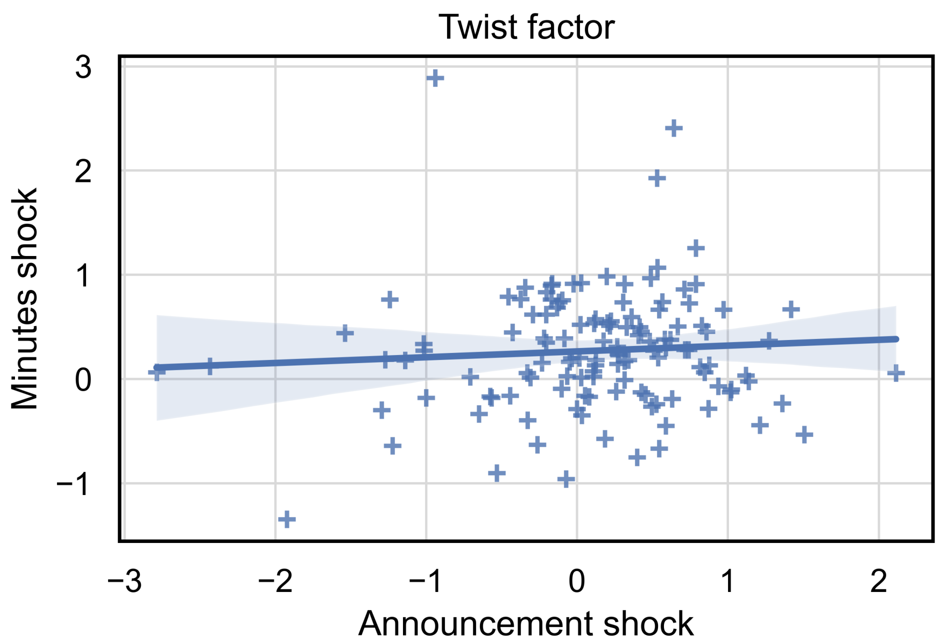

Figure 2: Twist factor: No relationship between announcement- and minutes-day responses

Table 3: Regressing minutes shocks against corresponding announcement shocks: Twist factor

	$mps^{Twist}_{t,min}$
Constant	-0.0265
	(0.126)
$mps^{Twist}_{t,ann}$	-0.1213
	(0.076)
Observations	77
R-squared	0.028
Adj. R-squared	0.015
F-statistic	2.560
Durbin–Watson	2.097

Notes: Robust standard errors (HAC, 4 lags) in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5 Model

5.1 A basic model of Noisy Signals

At the time of a monetary policy announcement t, the FOMC makes an announcement, generates a signal:

$$s_t^a = x_t + e_t^a, \quad e_t \sim N(0, \sigma_a^2)$$

The underlying variable x_t denoting the forward guidance factor corresponding to the stance of policy.

The private-sector agents participating in the bond market revise their beliefs regarding the underlying state x_t upon observing the announcement signal using a Kalman filter, arriving at the estimate $x_{t|t}$.

For simplicity, I assume that the uncertainty about the fundamental x_t is completely resolved when minutes are released and market participants observe the true underlying forward guidance stance x_t.

$$s_t^m = x_t$$

Once the minutes signal is observed, the true x_t is revealed. The agents revise their beliefs once again leading to a minutes-day revision

$$x_t - x_{t|t}$$

Hence, in the model the financial market has a prior expectation revises its forecast upon observing the announcement signal. Finally upon the release of minutes, the true monetary policy signal x_t is observed and so is the forecast error.

Let x_t have a persistent process given by:

$$x_t = \rho x_{t-1} + u_t$$

$$u_t \sim N(0, \sigma_u^2)$$

This persistent structure is motivated from the persistence of the underlying macroeconomic variables

Let S_t denote the history of signals received up to time 't'. I denote monetary policy shock associated with the period-t announcement as mps_t^a and the measured value as $\hat{mps}_t^a$.

$$\hat{mps}_t^a = mps_t^a + \epsilon_t^a$$

where ϵ_t^a denotes the measurement error in the period-t announcement shock. Similarly, for the minutes:

$$\hat{mps}_t^m = mps_t^m + \epsilon_t^m$$

$$mps_t^a = \tilde{E}[x_t|\mathcal{I}^{t-1} \cup s_t^a] - \tilde{E}[x_t|x_{t-1}]$$

$$mps_t^m = x_t - \tilde{E}[x_t|\mathcal{I}^{t-1} \cup s_t^a]$$

A rational agent updates beliefs about the underlying state x_t according to Bayes' Rule as:

$$f(x_t|S_t) = \frac{f(s_t|x_t)f(x_t|S_{t-1})}{\int_X f(s_t|x_t)f(x_t|S_{t-1})}$$

The rational estimate in this case is given by

$$f(x_t|S_t) \sim N(x_{t|t}, \frac{\Sigma_{t|t-1}\sigma_\epsilon^2}{\Sigma_{t|t-1} + \sigma_\epsilon^2})$$

where the $x_{t|t}$, the Kalman filtered-estimate at time 't' is given by

$$x_{t|t} = x_{t|t-1} + \frac{\Sigma}{\Sigma + \sigma_\epsilon^2}(s_t - x_{t|t-1}) \tag{3}$$

where Σ, the long-run asymptotic variance of $f(x_{t+1}|S_t)$ i.e $\Sigma_{t+1|t} = \Sigma_{t|t-1} = \Sigma$

$$\Sigma = \frac{-(1-\rho^2)\sigma_\epsilon^2 + \sigma_u^2 + \sqrt{[(1-\rho^2)\sigma_\epsilon^2 - \sigma_u^2]^2 + 4\sigma_\epsilon^2\sigma_u^2}}{2} \tag{4}$$

Define the Kalman gain,

$$K = \frac{\Sigma}{\Sigma + \sigma_\epsilon^2} \tag{5}$$

Then it can be shown that under rationality, the realized error $(x_t - x_{t|t})$ and the belief revision $(x_{t|t} - x_{t|t-1})$ corresponding to meeting t are related as:

$$x_t - x_{t|t} = \frac{1-K}{K}(x_{t|t} - x_{t|t-1}) \tag{6}$$

Hence, underreaction in adjustments in response to announcements (which would imply a positive coefficient) can be produced by a model with rational Bayesian updating in presence of noisy signals.

5.2 A Model of Diagnostic Expectations

Following BGMS, I describe a model with a distortion of rationality with diagnostic expectations to account for the observed results.

The diagnostic expectations model is based on the heuristic that after observing a signal that is different from their ex-ante expectation, states that were more likely to generate the signal (representative) are weighted more than under full rationality.

Define

$$R(x) = \frac{f(x|S_{t-1} \cup s_t)}{f(x|S_{t-1})}$$

Under diagnostic expectations, the posterior distribution is given by

$$f^\theta(x|S_t) = f(x|S_t)R(x)^\theta \frac{1}{Z}$$

$\theta = 0$ corresponds to rational expectations. For $\theta > 0$, the diagnostic filter inflates the probability of representative states (the ones were more likely to have generated the signal) and deflates the probability of the unrepresentative ones. Diagnostic beliefs are given by a normal distribution with a shifted mean:

$$f^\theta(x_t|S_t) \sim N(x^\theta_{t|t}, \frac{\Sigma\sigma^2_\epsilon}{\Sigma + \sigma^2_\epsilon})$$

where $x^\theta_{t|t}$ is given by

$$x^\theta_{t|t} = x_{t|t} + \theta(x_{t|t} - x_{t|t-1})$$

Under diagnostic expectations, the forecast revision at t, BR_t is:

$$x^\theta_{t|t} - x^\theta_{t|t-1} = (1+\theta)(x_{t|t} - x_{t|t-1}) - \theta\rho(x_{t-1|t-1} - x_{t-1|t-2}) \tag{7}$$

The error, realized upon receiving the period-t minutes signal denoted as RE_t, is given by:

$$RE_t = x_t - x^\theta_{t|t} = (\frac{1-K}{K} - \theta)(x_{t|t} - x_{t|t-1})$$

Define the belief revision conditional upon receiving the announcement signal under rationality as $z_t = x_{t|t} - x_{t|t-1}$

$$var(RE_t) = (\frac{1-K}{K} - \theta)^2 var(z_t) \tag{8}$$

$$var(BR_t) = [(1-\theta)^2 + \rho^2\theta^2]\Psi - 2\theta(1+\theta)\rho^2(1-K)\Psi \tag{9}$$

where $\Psi = (\frac{\Sigma}{\Sigma + \sigma_\epsilon^2})^2(\sigma_u^2 + \sigma_\epsilon^2)$ The announcement-minutes regression coefficient is:

$$\beta = \frac{cov(x_t - x^\theta_{t|t}, x^\theta_{t|t} - x^\theta_{t|t-1})}{var(x^\theta_{t|t} - x^\theta_{t|t-1})}$$

In terms of the primitives, we can write:

$$\beta = (\frac{1-K}{K} - \theta)\frac{(1+\theta) - \theta\rho^2(1-K)}{[(1+\theta)^2 + \theta^2\rho^2] - 2\theta(1+\theta)\rho^2(1-K)} \tag{10}$$

Similarly, it can be shown that

$$cov(BR_t, BR_{t-1}) = \Big[[(1+\theta)^2 + \theta^2\rho^2](1-K) - \theta(1+\theta) - \theta\rho(1+\theta)(1-K)\Big]\rho\Psi \tag{11}$$

$$cov(RE_t, RE_{t-1}) = (\frac{1-K}{K} - \theta)^2(1-K)\rho\Psi \tag{12}$$

6 Calibration and Results

I quantify the model by estimating the model parameters $(\theta, \rho, \sigma_u, \sigma_\epsilon)$. I use an over-identified system matching the 5 moments given by equations (5)-(9). The solution involves a least squares solution for the system:

$$(\frac{1-K}{K} - \theta)^2\Psi = var(\hat{RE_t}) = 0.005$$

$$[(1-\theta)^2 + \rho^2\theta^2]\Psi - 2\theta(1+\theta)\rho^2(1-K)\Psi = var(\hat{BR_t}) = 0.004$$

$$(\frac{1-K}{K} - \theta)\frac{(1+\theta) - \theta\rho^2(1-K)}{[(1+\theta)^2 + \theta^2\rho^2] - 2\theta(1+\theta)\rho^2(1-K)} = \hat{\beta}$$

$$[[(1+\theta)^2 + \theta^2\rho^2](1-K) - \theta(1+\theta) - \theta\rho(1+\theta)(1-K)]\rho\Psi = cov(\hat{BR_t}, \hat{BR}_{t-1})$$

$$(\frac{1-K}{K} - \theta)^2(1-K)\rho\Psi = cov(\hat{RE_t}, \hat{RE}_{t-1})$$

Where

$$\Psi = (\frac{\Sigma}{\Sigma + \sigma_\epsilon^2})^2(\sigma_u^2 + \sigma_\epsilon^2)$$

$$\Sigma = \frac{-(1-\rho^2)\sigma_\epsilon^2 + \sigma_u^2 + \sqrt{[(1-\rho^2)\sigma_\epsilon^2 - \sigma_u^2]^2 + 4\sigma_\epsilon^2\sigma_u^2}}{2}$$

$$K = \frac{\Sigma}{\Sigma + \sigma_\epsilon^2}$$

I weight all moment conditions equally, using an identity weighting matrix.

6.1 Estimation Results

The solution to the estimation problem yields the following point estimates:

$$\rho = 0.0726 \;\; \theta = 0.7494 \;\; \sigma_u^2 = 39.527 \;\; \sigma_\epsilon^2 = 14.695$$

Table 4: Comparison of targeted moments generated by the model with data

	Data	Model-implied
$var(RE_t)$	1.7878	1.7881
$var(BR_t)$	4.1336	4.1240
β	-0.1778	-0.2161
$cov(RE_t, RE_{t-1})$	-0.0691	0.0811
$cov(BR_t, BR_{t-1})$	1.4069	-1.0630

The low persistence ρ suggests that the market participants do not perceive the Fed's forward guidance stance to be very persistent. The diagnosticity parameter θ has a value ≈ 0.75 which suggests that beliefs respond 75% more to recent news than do rational expectations, which suggests a large degree of distortion.

7 Conclusions

In much of the monetary policy literature, the identification of monetary policy shocks is focused on the information revealed during the FOMC announcement-day. The transmission of information to the financial market through the release of FOMC minutes by the Fed has received far less attention.

I document a consensus overreaction of bond markets to information about forward guidance contained in the announcements, followed by a reversion towards zero upon receiving more context when the corresponding minutes are released. This effect is in violation of Full-information Rational Expectations (FIRE). I model this phenomenon based on work by Coibion and Gorodnichenko (2012) and Bordalo et al. (2020). Estimates suggest that the financial markets react to news from FOMC announcements concerning forward guidance about 75% more than they would under rational expectations. Interestingly, I only find this effect to be active along the forward-guidance dimension of monetary policy. This effect is consistent with the intuition that most of the relevant information contained in FOMC minutes relates with clarifying the FOMC's stance on near-term interest rates.

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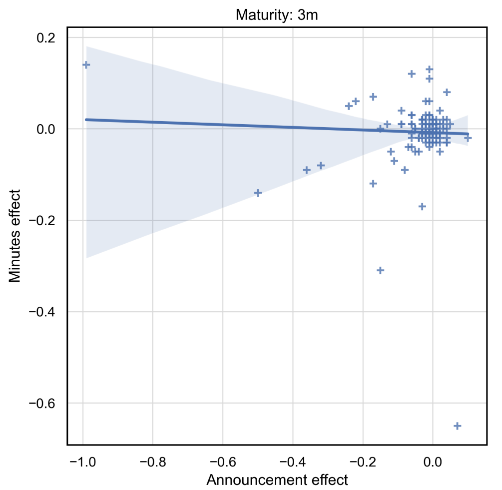
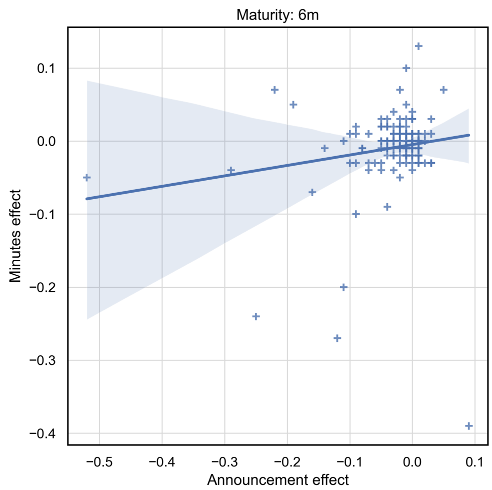
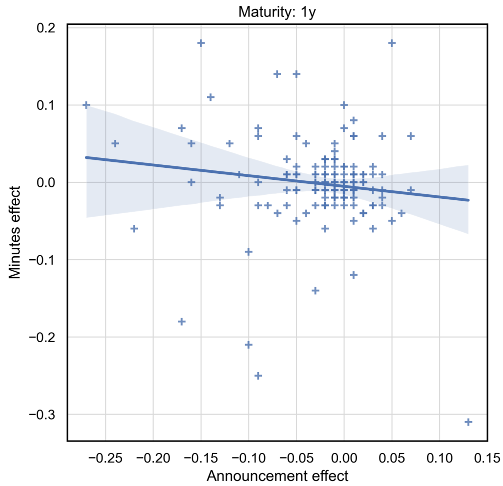
A FOMC minutes and announcement effects at different maturities



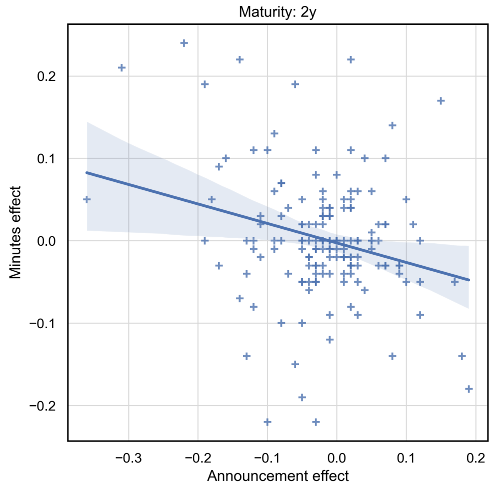
(a) 3-month



(b) 6-month

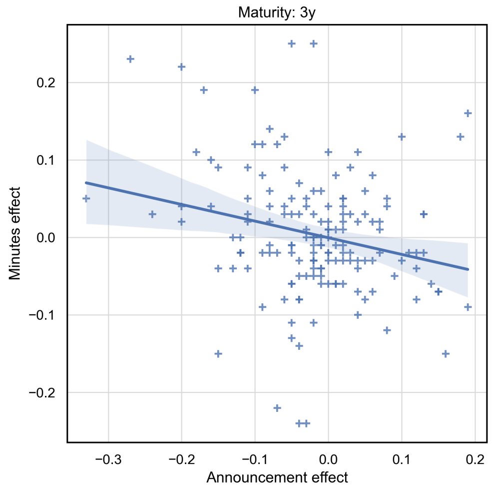


(c) 1-year

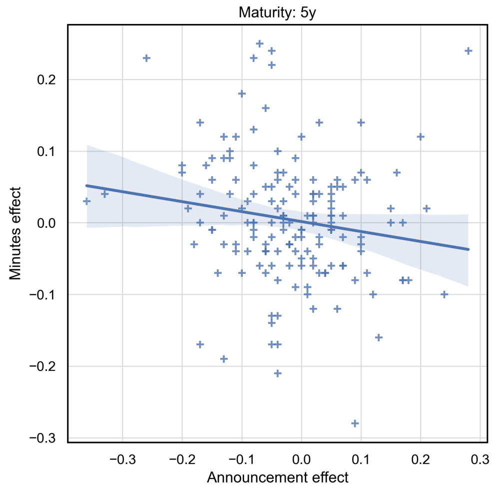


(d) 2-year

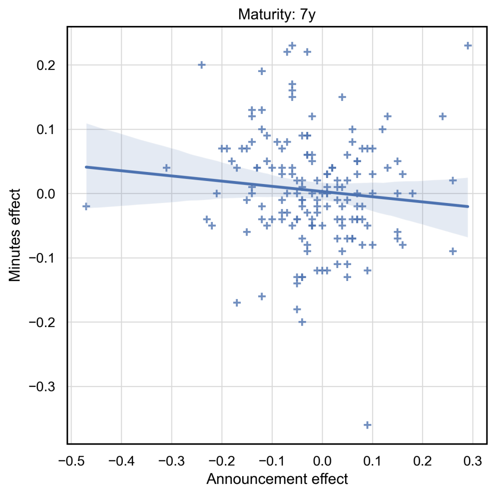
Figure 3: Comparing minutes-day and announcement-day effects at various maturities



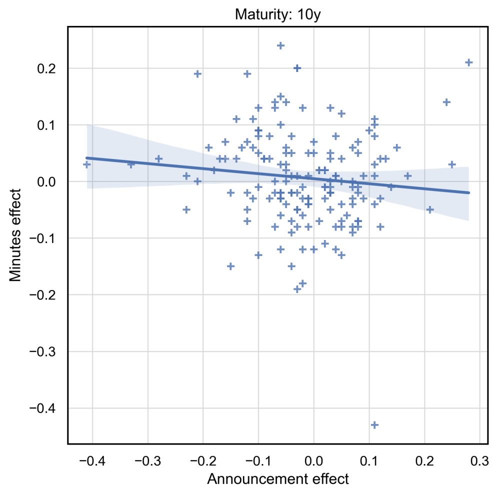
(a) 3-year



(b) 5-year



(c) 7-year



(d) 10-year

Figure 4: Comparing minutes-day and announcement-day effects at various maturities

B Does FOMC communication cause abnormal volatility in the yield curve?

Table 5: One-tailed F-tests: Minutes-day movements in the yield curve vs Non-monetary news days

Maturity	Var_{Min}	Var_{NN}	F	p-value
1m	0.0088	0.0096	0.921	0.7496
3m	0.0047	0.0045	1.034	0.3706
6m	0.0027	0.0029	0.944	0.6784
1y	0.0033	0.0032	1.036	0.3651
2y	0.0057	0.0050	1.142	0.1098
3y	0.0066	0.0057	1.154	0.0926*
5y	0.0077	0.0067	1.155	0.0922*
7y	0.0077	0.0069	1.117	0.1528
10y	0.0074	0.0063	1.169	0.0748*

Notes: Sample sizes are $n_1 = 160$ and $n_2 = 4958$ for all maturities. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The one-tailed F-test does not reject the null that the variance of yields on days corresponding to the release of FOMC minutes is the same as those on days without any FOMC news.

Table 6: One-tailed F-tests: Announcement-day movements in the yield curve vs Non-monetary news days

Maturity	Var_{Ann}	Var_{NN}	F	p-value
1m	0.0196	0.0096	2.047	0.0000**
3m	0.0106	0.0045	2.344	0.0000**
6m	0.0040	0.0029	1.409	0.0007**
1y	0.0036	0.0032	1.130	0.1297
2y	0.0075	0.0050	1.512	0.0000**
3y	0.0088	0.0057	1.531	0.0000**
5y	0.0109	0.0067	1.641	0.0000**
7y	0.0120	0.0069	1.753	0.0000**
10y	0.0110	0.0063	1.741	0.0000**

Notes: Sample sizes are $n_1 = 160$ and $n_2 = 4958$ for all maturities. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The one-tailed F-test rejects the null that the variance of yields on days corresponding to FOMC announcements is the same as those on days without any FOMC news, except for the 1-year yield.