When does Monetary Policy Matter? The Life-Cycle of Policy Expectations

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Abstract

This paper investigates when monetary policy announcements matter for asset price dynamics. While there is substantial evidence for the key role of news about the future policy path, FOMC announcements explain only a limited fraction of asset price changes on these days. Using a simple but novel classification approach based on the interplay between signals about the current and future policy stance, we uncover distinct shapes, across maturities, of adjustments in policy expectations and identify meetings with strong forward-looking information content. We show that these statements – one-third of the total – drive most, if not all, of the effects of monetary policy on long-term interest rates. On these days, monetary surprises account for a large fraction of the variation in these rates. In contrast, statements about the present – half of all meetings – have no effect on long-term rates but do affect short-term rates, stock prices and risk measures. The strong effects on long-term rates appear to stem from investors gaining insights into the central bank reaction function.

JEL classification: E43, E52, E58, G12.

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1 Introduction

Announcements of monetary policy decisions are pivotal events that convey multiple types of information to economic agents. Financial market participants learn about the current policy stance but also about the likely future policy path and policymakers' views about the outlook for broader economic and financial conditions.[1] There is ample evidence that monetary policy announcements affect asset prices, in particular long-term interest rates (Cochrane and Piazzesi, 2002, Gürkaynak, Sack, and Swanson, 2005a, Nakamura and Steinsson, 2018), and Hillenbrand (2025) shows that the overall dynamics of US long-term interest rates over the last decades can be explained by their variations around FOMC announcements. However, these announcements explain only a small fraction of the variance of long-term interest rates on FOMC days (Hanson and Stein, 2015). This paper aims to reconcile these facts, which are surprising when considered together.

The starting point of our analysis is the work of Gürkaynak, Sack, and Swanson (2005b) (GSS), who decompose the asset price changes associated with a FOMC announcement into a surprise about the current decision on the Federal Funds target rate, the *target* factor, and a surprise about the future policy path, the *path* factor. They convincingly show that most of the news conveyed on these days is about the future policy path. By construction, these two factors are orthogonal with respect to the current decision surprise (as defined by Kuttner, 2001), but have the same effect on 1-year policy expectations.[2] This means that the target and path factors differentiate well announcements about the present, but have less power in identifying announcements that provide key information about the future, which are arguably key for investors' decisions.

In this paper, we exploit the interplay between target and path factors – in terms of sign and magnitude – to uncover distinct shapes, across maturities, of the adjustments in policy expectations on announcement days, *i.e.* the life-cycle of policy expectations. We propose a simple, but powerful, classification of FOMC statements that enables to precisely identify announcements with strong forward-looking information content. In other words, based on the GSS decomposition of news *within* FOMC meetings, we provide a classification *across* meetings that isolates statements that contain substantial relevant information about the future.

We then explore how the shape of adjustments in policy expectations across maturities affects the transmission of monetary policy to asset prices. Based on the 188 statements of US monetary policy announcements from 1999 to 2022, we find that the *future-dominated* statements – one-third of the total – drive most, if not all, of the effects of monetary policy on long-term interest rates. In contrast, statements about the present – half of all meetings – do affect short-term rates, stock prices and risk measures, but have no effect on long-term rates. A key finding is that the identification of the effects of monetary policy comes from two distinct subsets of statements, with the remaining one-sixth of meetings providing limited identification power.

To isolate the set of *future-dominated* statements, we rely on the relative sign and magnitude of the target and path surprises. We first consider whether both factors move in the *same* or *opposite*

[1] This may include the revelation of some central bank information as in Romer and Romer (2000), Ellingsen and Söderström (2001) and Campbell, Evans, Fisher, and Justiniano (2012) or may affect perceptions about policymakers' preferences as in Bauer, Pflueger, and Sunderam (2024) and Bocola, Dovis, Jørgensen, and Kirpalani (2024).

[2] Gürkaynak et al. (2005b) discuss these definitions and their implications in their section 2.5.

directions – that is, whether FOMC statements convey *consistent* or *conflicting* signals about the present and future policy stance. An important result for our classification is that when target and path factors have opposite signs, monetary surprises are driven by adjustments in longer-term policy expectations. In contrast, when target and path factors have the same sign, monetary surprises are driven by shorter-term policy expectations. Second, we categorize FOMC statements according to the magnitude of the path factor *relative* to the target factor. The key feature is whether news about the future policy stance *dominate* news about the current stance, not whether the path factor is large in absolute terms. We label as *future-dominated* those statements that combine *(i)* conflicting signals and *(ii)* a relatively larger path factor. As a complement to the GSS decomposition, this classification allows us to isolate statements that appear to be uniquely informative about the future, and to drive the heterogeneous effects of monetary policy on long-term rates.

We estimate the causal effect of monetary policy on stock prices, nominal yields and risk measures using the high-frequency monetary policy surprise series of Bauer and Swanson (2023a) adjusted for economic data releases. Without any classification of meetings, we replicate the standard response of asset prices to monetary policy surprises, as extensively documented in the literature. It is worth stressing the low explanatory power of these regressions, although FOMC announcements are the major event on these days (12% for 5-year rates). When examining asset price changes in a 30-min window around the policy announcement, monetary surprises account for a more substantial portion of the variance (46% for 5-year rates).[3] But to some extent, this observation is somewhat mechanical given that the key assumption is that nothing else happen in this window and asset price changes are a direct reflection of the monetary news.

When estimating the heterogeneous effects of monetary policy across our classification of statements, we find that monetary surprises have standard effects on stock prices, short-term interest rates and risk measures on the subset of statements when target and path surprises have the same sign – so most of the weight of the monetary surprise is on short-term policy expectations. The key result of this paper is that the response of medium- to long-term interest rates only comes from the subset of future-dominated statements. While a 100 bp exogenous increase in the monetary policy stance raises 5-year interest rates by 55 bp in the standard regression over all statements, the effect is 96 bp over the sample of future-dominated statements, but not statistically different from zero over the remaining statements.[4] Not only is the estimated effect strong, highly significant and much larger than for other statements, but its explanatory power is also much higher (26% vs. 5% for 5-year rates at the daily frequency, and 62% vs. 38% in the 30-min window).

This result holds across alternative settings. We test multiple measures of monetary surprises, including those from Nakamura and Steinsson (2018), Gürkaynak et al. (2005b), the unadjusted measure by Bauer and Swanson (2023a), and the measure from Jarociński and Karadi (2020) purged of central bank information effects. Our result is also robust to an alternative classification based on the series of Nakamura and Steinsson (2018). This alternative classification identifies less future-dominated statements, but still we find the similar result that these statements are highly informative for long-term interest rates.

[3]For comparison, Bauer and Swanson (2023b) document a R2 of 69, 55 and 36% using the same 30-min surprises over a sample from 1988 to 2019 for 2-, 5- and 10-year rates respectively.
[4]The equivalent effect in Bauer and Swanson (2023b) over all statements in their sample is 64 bp.

We also control for various potential confounding factors. The future-dominated statements may occur together with other dimensions that affect long-term interest rates themselves. We disentangle the effect of monetary policy uncertainty, quantitative easing and forward guidance announcements, the holding of a press conference, the publication of the Summary of Economic Projections, or more generally the presence of a large path factor (in absolute terms), from the effect of future-dominated statements. We find that none of these elements can explain the strong effects of monetary surprises on interest rates stemming from these statements.

We therefore aim to understand the underlying nature of the news conveyed by these highly informative statements. To do so, we distinguish different types of news from policy announcements based on their differentiated effects on asset prices, in a similar spirit as the sign-identification approach of Cieslak and Pang (2021). The positive impact on the 5- and 10-year nominal yields together with the absence of an impact on equity valuations and the VIX excludes that the result for future-dominated statements is driven by the risk premium channel of monetary policy.[5] The co-movement in asset prices rather suggests some news about the central bank reaction function as in Schmeling, Schrimpf, and Steffensen (2022) and Bauer and Swanson (2023a). To further explore this issue, we decompose the responses of nominal interest rates into their expectation hypothesis (EH) and term premium components, as well as into real interest rates and inflation compensation. We find that the EH component reacts to monetary surprises of future-dominated statements, but not the risk premium, consistent with insights from the co-movement approach. The decomposition into a real component and an inflation compensation shows that that the overall response comes from real interest rates, not inflation compensation. This suggests that the mechanism at work could be that these announcements contain information about the path of the natural rate as in Nakamura and Steinsson (2018) in contrast to news about the policy response to economic activity, or that investors revise their perception of a time-varying inflation target (consistent with a framework in which the central bank behavior reveals information about the inflation target as in Clayton and Schaab, 2025, and investors do not know the model of the economy with unobserved key features as in Farmer, Nakamura, and Steinsson, 2024).

A prediction of our interpretation of the main result is that the strong information content conveyed on these FOMC statements should reduce information acquisition afterwards. We find that the volatility of policy expectations and the average daily change in long-term interest drop remarkably in the intermeeting period that follows such statements. We also show that the impact of economic data releases on policy expectations is smaller and that the sensitivity of long-term interest rates to policy expectation adjustments in response to economic data releases and policymakers' speeches is reduced after future-dominated statements. These results support the hypothesis that these statements have a strong forward-looking component and result in a less intense information acquisition in the subsequent intermeeting period.

These findings have important implications for state-dependent and time-varying analyses of the effects of monetary policy. The identification of the effects of monetary policy is not homogeneous across FOMC meetings and distinct subsets of statements imply different impact of mone-

[5]See Bernanke and Kuttner (2005), Bekaert, Hoerova, and Duca (2013), Gertler and Karadi (2015), Gorodnichenko and Weber (2016), Drechsler, Savov, and Schnabl (2018), Kroencke, Schmeling, and Schrimpf (2021) and Pflueger and Rinaldi (2022). Estimated asset price responses suggest that this channel is likely to operate for same-sign statements.

tary surprises on asset prices. In macroeconomic models, a monetary shock today and a forward guidance shock influence the economy through the same variables but with different effects at different horizons. Our findings suggest that macroeconomic models could allow for heterogeneous responses as a function of the nature of monetary policy announcements.

There is a prolific literature on the identification of monetary policy effects (see Ramey 2016 for an extensive review). An important topic of attention is that policy announcements convey additional signals beyond monetary news (Cieslak, 2018, Cieslak and Schrimpf, 2019, Golez and Matthies, 2025, Karnaukh and Vokata, 2022, Hoesch, Rossi, and Sekhposyan, 2023, Miranda-Agrippino and Ricco, 2021). Related to our focus, Neuhierl and Weber (2019), Andrade and Ferroni (2021) and Lunsford (2020) highlight the role of signals about the future stance for the transmission of monetary policy. Monetary surprises have also been decomposed according to the type of instruments used (Altavilla, Brugnolini, Gürkaynak, Motto, and Ragusa 2019 and Swanson 2021). While Gürkaynak, Kısacıkoğlu, and Wright (2020) focus on potentially missing information from asset price responses, Handlan (2022), Acosta (2024) and Aruoba and Drechsel (2024) improve the measurement of monetary surprises with textual analysis.

The closest paper to ours is Boehm and Kroner (2024) that also documents that standard monetary surprises explain only a small fraction of asset prices, and uses stock prices and exchange rates to complement the identification of monetary surprises with a "*non-yield*" shock. They focus on the two aforementioned asset prices and the global effects of this shock, while we analyze the transmission of FOMC announcements to US Treasury yields. In addition, the main finding of our paper also relates directly to the result of Hamilton and Jorda (2002) that FOMC announcements can have substantially different effects according to characteristics of the decision, although their paper focuses on changes in the Fed funds rate.

Our paper highlights a novel kind of identification issue with monetary surprises. In that respect, we extend the result of Hillenbrand (2025) that changes in long-term rates are entirely driven by FOMC days compared to non-FOMC days, by showing that they are even driven by a subset of these FOMC statements only. This paper also relates to the literature that aims to understand why monetary policy has a positive effect on long-term rates that is larger than what can be accounted for by the effect on the expected path of short-term rates. Gürkaynak et al. (2005a) and Bianchi, Lettau, and Ludvigson (2022) put forward that monetary policy may contain news about the long-run inflation target, and would affect beliefs about trend inflation, while Hanson and Stein (2015), Hanson, Lucca, and Wright (2021) and Kekre, Lenel, and Mainardi (2024) suggest that the effects of monetary policy work through risk premia. Our results for future-dominated statements are consistent with the mechanism highlighted by the former papers.

Section 2 presents our framework, while Section 3 documents how the shape of adjustments in policy expectations matters for the transmission of monetary policy. Section 4 explores the information content of future-dominated statements and Section 5 examines information acquisition dynamics in the subsequent intermeeting period. Section 6 concludes.

2 The present vs. future information content of monetary surprises

Over the past thirty years, a rich literature has emerged on the measurement and identification of monetary policy shocks (Coibion, 2012). Notably, we have seen a move from VAR and narrative approaches (Bernanke and Blinder, 1992, Christiano, Eichenbaum, and Evans, 1999, Romer and Romer, 2000) to high-frequency approaches to mitigate important endogeneity concerns (Cook and Hahn, 1989, Rudebusch, 1998, Rigobon and Sack, 2004). Kuttner (2001), Cochrane and Piazzesi (2002) and Faust, Swanson, and Wright (2004) pioneered this literature using data from the futures market for Federal funds.[6] These contracts are useful for distinguishing between anticipated and unanticipated changes in the policy rate. Anticipated changes are already embedded in futures prices. When the FOMC actual decision differs from what is implied by the futures, this difference represents an unanticipated change, referred to as a monetary policy surprise.

2.1 Modeling the present vs. future information content

However, monetary surprises account for only a tiny fraction of interest rate changes and are often negligible such that this approach comes at the cost of a reduced statistical power. In a seminal paper, Gürkaynak et al. (2005b) show that news about changes in the current policy stance represents only a small fraction of the news conveyed on FOMC announcement days. Using policy expectations at different horizons, they show that the effects of monetary policy on asset prices can be adequately characterized by two factors – the first and the second principal components. After performing a suitable rotation, they offer a structural interpretation of these unobserved factors: the *target* factor corresponds to surprise changes in the *current* Federal Fund Rate (FFR) target (the *present* stance) while the *path* factor corresponds to surprise changes in the future path of monetary policy over the coming year (the *future* stance). By construction, changes in the path factor are orthogonal to changes in the current FFR. Importantly, the *path* and *target* factors can be viewed as shocks to the *level* and the *slope* of the term structure of policy expectations, respectively.

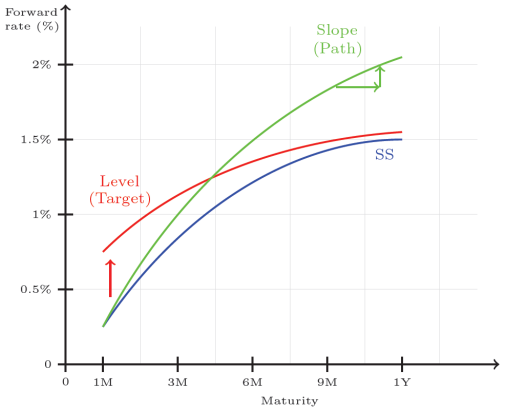
It is important to understand the different implications of the target and path factors for policy expectations, depending on the horizon considered. Figure 1(a) shows a schematic representation of the term structure of the forward interest rates. The blue curve shows the steady-state (SS) term structure of interest rate expectations. The red curve shows the term structure of policy expectations following a restrictive shock to the *target* factor alone. The restrictive surprise to the current FFR materializes as an immediate increase in the *level* of the current-month forward rate, while medium-term policy expectations are left unchanged. In contrast, the green curve shows the term structure of expectations following a shock to the *path* factor only. We can see that, in the absence of a target surprise, expectations of the current interest rate do not change, but expectations of the future policy rate increase. The two green arrows materialize a restrictive *path* surprise as a *steepening* of the policy expectations curve. For what comes next, it is important to note that in this example the path and target factors move in the same – restrictive – direction.

Figure 1(b) shows how these target and path surprises translate into a model by plotting the impulse response function (IRF) of the policy rate. The black, solid curve represents a standard,

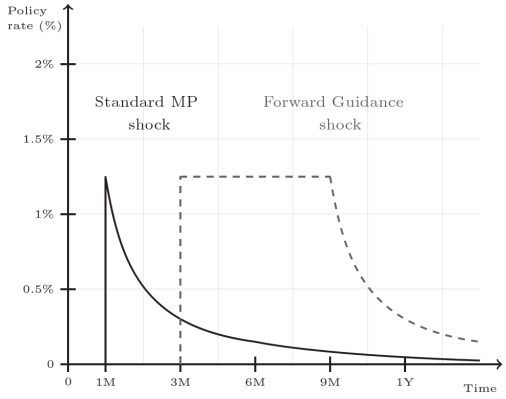
[6] A Fed funds futures contract reflects the market's consensus about the average daily effective federal funds rate for a given calendar month (Krueger and Kuttner, 1996).

Figure 1: A schematic illustration of present and future monetary signals

(a) In the data



(b) In models



Note: Figure (a) plots the steady state (SS) term structure of forward rates (blue line) as well as the deviation from this steady state following (i) a *target* surprise and (ii) a *path* surprise as in Gürkaynak et al. (2005b). The former affects the *level* of the forward rate term structure, while the latter affects the *slope* of that term structure. Figure (b) plots the IRF of the policy rate following a monetary policy shock. It represents (i) a *standard monetary policy shock* (solid black line) and (ii) a *typical forward guidance shock* (dashed grey line).

restrictive, monetary policy (MP) shock. The grey dashed curve represents a typical, restrictive, forward guidance shock, *i.e.* a shock to interest rates at some future horizon (see McKay, Nakamura, and Steinsson, 2016, Bundick and Smith, 2020 and Del Negro, Giannoni, and Patterson, 2023, for a detailed analysis of the effect of forward guidance). Compared with a standard MP shock, a forward guidance shock causes the policy rate to rise at a later horizon, to stagnate at that level for the duration of the forward guidance announcement, and then to vanish according to the persistence of the shock process. Although there is no one-to-one mapping between the forward guidance shock and the path surprise (in particular, the representation of the path surprise in Figure 1(a) does not have a trigger date), they capture the same concept.

2.2 The standard effects of monetary policy surprises

We start by presenting the effects of standard monetary policy surprises on various asset prices as a benchmark. Nakamura and Steinsson (2018), Jarociński and Karadi (2020) and Bauer and Swanson (2023a) consider changes in the first principal component of short-term interest rate future contracts spanning the first year of the term structure in the spirit of Gürkaynak et al. (2005b), over a 30-minute window (from 10 minutes before to 20 minutes after) surrounding FOMC announcements. Bauer and Swanson (2023a) argue that central bank information effects can be attributed to investors' responses to publicly available information prior to the announcements and propose a *news-adjusted* measure of monetary surprises. We consider their series and we use the updated series of the target and path surprises estimated by Acosta, Brennan, and Jacobson (2024) for the GSS decomposition of news about the present and future policy stance.

We focus on monetary policy announcements following the 188 (scheduled) FOMC meetings that took place between 1999 and 2022. We follow the standard event-study approach to assess the effect of monetary policy surprises on three types of asset prices: stock prices, Treasury nominal yields and market volatility measures. In particular, we run the following regressions:

$$\Delta Y_t = \alpha + \beta \cdot MPS_t + \epsilon_t \tag{1}$$

where ΔY_t is the daily change in a given asset price, including stock prices ($S\&P500$), zero coupon nominal interest rates at 2, 5, and 10-year maturity, and a market volatility measure (VIX). MPS_t are the overall monetary surprises from Bauer and Swanson (2023a) or the Target and Path surprises taken in isolation, measured in a 30-min window around FOMC announcements.

Table 1: Standard monetary policy effects

	S&P500	2y	5y	10y	VIX
MPS_t	-4.679*	0.645***	0.552***	0.308***	6.236**
	[2.46]	[0.12]	[0.12]	[0.11]	[3.03]
R^2	0.03	0.22	0.12	0.04	0.02
Obs.	188	188	188	188	188
$Target_t$	-5.105	0.328**	0.175	0.039	4.854
	[3.58]	[0.16]	[0.14]	[0.13]	[4.98]
$Path_t$	-1.771	0.350***	0.324***	0.212***	2.505*
	[1.26]	[0.04]	[0.05]	[0.05]	[1.28]
R^2	0.04	0.30	0.17	0.08	0.02
Obs	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. Parameters are estimated from Equation 1 using OLS. They capture the effects of the high-frequency news-adjusted monetary surprises of Bauer and Swanson (2023a) and of Target and Path surprises from Gürkaynak et al. (2005b). The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4), and the VIX in column (5).

When considering the overall monetary policy surprises, we recover the standard effects of monetary policy that are largely documented in the literature (see upper panel of Table 1). We observe a negative co-movement with stock market valuations, a positive relationship between monetary policy surprises and nominal interest rates (with a larger effect on the short-end of the yield curve), and a positive relationship with risk premium. These results are consistent with the literature (see, *e.g.*, Bernanke and Kuttner, 2005). Quantitatively, a 10 bp restrictive monetary policy surprise causes the S&P500 to fall by 0.47%, interest rates to rise by 6.4 bp to 3.1 bp, and the VIX to rise by 0.62 units (which correspond to one-third of the standard deviation of VIX variations on FOMC days). It is worth noting that although FOMC announcements are arguably the main event of these days, their news content only explains a small fraction of the variance of these asset prices on these days – 22% for 2-year rates, but only 2% and 3% for the VIX and S&P500. Bauer and Swanson (2023b) find that monetary policy surprises explain 55% of the variance of 5-year rates, but of the change in the narrow 30-minute window surrounding the announcement (see their Table 3).[7] When the time window for the dependent variable is widened, Hanson and Stein (2015) document that the fraction of the variance explained by monetary surprises is much lower, around 8 and 9%, for one-day and two-day changes in 10-year rates (see their Table 2). Kilic, Zhang, and Zotov (2024) also show using intraday data that although most of the VIX dynamics happens around the FOMC announcements, the explained variance remains small (see their Table

[7]Using 30-min window changes in the dependent variables (Appendix Table A1), we find a similar fraction (46%).

3). One way to shed light on this puzzle may be that monetary surprises are an heterogeneous concept that captures different signals, in particular about the horizon of the monetary news.

When decomposing the monetary policy surprise into its present and future components (lower panel of Table 1), we observe that the effect of the Target surprise is much larger than of the Path surprise on the S&P500 and VIX (however, the estimates are not or hardly significant), whereas the effect of the Path surprise is very strong and highly significant on interest rates. Although the use of Path surprises seems to help decomposing the effect of policy announcements on the term structure of interest rates, the share of the variance explained remains relatively low (30% and 8% at 2- and 10-year horizons). Gürkaynak et al. (2005b) finds that 94% and 74% of the variance can be explained at the same two horizons by these two factors, but, again, of the change in the 30-min narrow window bracketing the announcement (see their Table 5). When expanding the window at the daily frequency, Hanson and Stein (2015) show that the Path surprise only explains 10% of the variance of 10-year rates (see their Table 2). While Target and Path surprises help to decompose information flows about the present and future stance of monetary policy for a given meeting, they do not completely help to understand the reason why monetary surprises explain little of interest rate changes.

2.3 The life-cycle of policy expectations with Target and Path surprises

To better understand the nature of the information contained in Target and Path surprises, we examine in the data how these two objects move together with policy expectations at different horizons. Specifically, for each FOMC announcement t, we run the following regression on each of the k federal funds/Eurodollar futures contracts F_t^k (the current-month federal funds rate futures – FF1 – and Eurodollar futures expiring in 1, 2, 3 and 4 quarters – ED1, ED2, ED3 and ED4 –) used to construct monetary policy surprises and their decomposition:

$$\Delta F_t^k = \alpha + \beta_{MPS} \cdot MPS_t + \epsilon_t \tag{2}$$

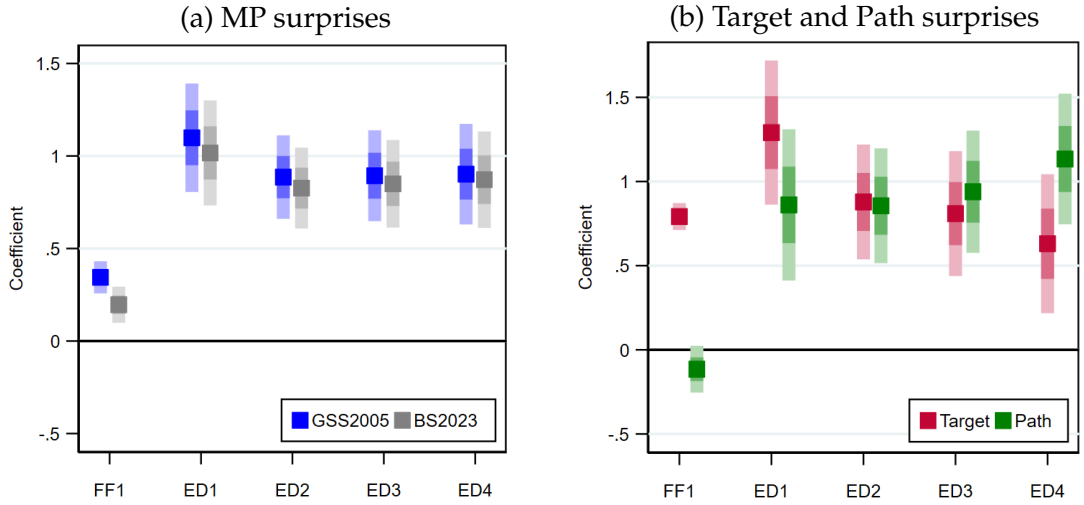
We then run the same regression using the *Target* and *Path* components:

$$\begin{cases} \Delta F_t^k = \alpha + \beta_T \cdot Target_t + \epsilon_t \\ \Delta F_t^k = \alpha + \beta_P \cdot Path_t + \epsilon_t \end{cases} \tag{3}$$

We start by estimating Equation 2 using either the total monetary surprises from Gürkaynak et al. (2005b) – the sum of the target and path components – or the *news-adjusted* monetary surprises from Bauer and Swanson (2023a). We plot the estimated coefficients for both measures for the different horizons k of policy expectations in Figure 2(a). First, we can see that the coefficients are very similar for each maturity across the MPS measures. The coefficients associated with the current-month futures (FF1) are small. However, the coefficients associated with the four Eurodollar futures contracts (ED1 to ED4) are larger and close to 1. This suggests that on average, most of the information conveyed on FOMC announcements is about the future path of policy, consistent with Gürkaynak et al. (2005b).

Figure 2(b) shows the estimated parameters from Equation 3 for Target and Path surprises sep-

Figure 2: Correlation with policy expectations at different maturities



Note: These figures represent the coefficient from Equation 2 (left panel) and equations 3 (right panel) for different maturities of policy expectations and different measures of monetary policy surprises, from Gürkaynak et al. (2005b) and Bauer and Swanson (2023a) on the left panel and from Target (in red) and path surprises (in green) on the right panel. FF1 is the current-month Fed Funds futures, ED1 to ED4 are the 1- from 4-quarter ahead Eurodollar futures. The shaded bars correspond to 1 and 2 standard errors confidence intervals.

arately. These coefficients help to assess how changes in Target and Path surprises are associated with changes in policy expectations at different maturities. The main take-away is that Target surprises are strongly associated with changes in the current policy rate whereas Path surprises are not (the coefficient is close to zero).[8] Although Target surprises are strongly associated with current quarter futures (ED1) and decrease with further maturities while Path surprises show increasing coefficients across maturities with a peak at ED4, the difference between Target and Path surprises is small and insignificant at these ED1 to ED4 maturities.[9] In other words, Target and Path surprises are very effective at differentiating news about the current policy stance, but they do not discriminate well news about the future policy stance. We next build on this insight and explore how the target/path decomposition can be used to better identify when the life-cycle of policy expectations gives weight to news about the future policy stance.

3 Classifying monetary news with policy expectation adjustments

To identify when the shape of the term structure of policy expectations reflects news about the future policy stance rather than about the present, we rely on the relative sign and magnitude of Target and Path surprises. We first document that whether Target and Path surprises convey consistent or conflicting signals about the current and future stance affects the life-cycle of policy expectations across maturities. We then estimate the effects of monetary surprises when the underlying signals are consistent or conflicting. We next explore how much the relative magnitude of signals about the present and future policy stance matters for the effects of monetary surprises.

[8]The factor loadings from the principal component analysis of Gürkaynak et al. (2005b) would be exactly zero.
[9]The factor loadings on ED4 from the principal component analysis would be one for both Target and Path surprises.

3.1 Consistent versus conflicting signals

We first characterize the life-cycle of adjustments in policy expectations on policy announcement days, based on the relative sign of Target and Path surprises. The direction of the signals about the current and future policy stance may not necessarily be consistent. For instance, the FOMC could pause in a tightening cycle (such that there is an easing surprise for the current stance) while using surprisingly hawkish language about its plans for the medium-term policy outlook. We leverage on the Target/Path decomposition of monetary surprises to propose a novel, very simple, but powerful, classification of the monetary surprises associated with the 188 FOMC meetings in our sample: we classify monetary policy surprises according to whether the policy announcement resulted in *consistent* or *conflicting* signals about the current and future policy stance. In practice, we separately identify monetary surprises characterized by (i) Path and Target surprises of the same sign, and (ii) Path and Target surprises with opposite signs:

$$\mathbb{1}_t^{\text{Opp}} = \begin{cases} 1 \text{ if } Path_t \times Target_t < 0 \\ 0 \text{ if } Path_t \times Target_t > 0 \end{cases} \tag{4}$$

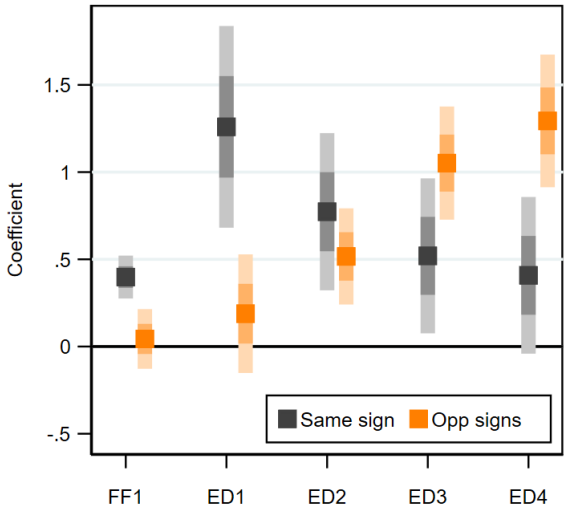
An alternative way of looking at this classification is to consider that we identify FOMC statements for which the slope of the term structure of policy expectations (as illustrated in Figure 1) does not move much – the short and long-end are impacted with surprises of the same sign, so there is a translation of the term structure – separately from those statements that lead to a pronounced change in the slope of the term structure – the short and long-end move in opposite direction.[10] Out of the 188 FOMC announcements between 1999 and 2022, there are 100 "same sign" monetary surprises (53%) and 88 "opposite sign" ones (47%).

We first explore the shape of the term structure of policy expectations for such cases as we did in Figure 2. We estimate Equation 2 over the two subsamples of "consistent" (when $\mathbb{1}_t^{\text{Opp}} = 0$) and "conflicting" monetary surprises (when $\mathbb{1}_t^{\text{Opp}} = 1$). Figure 3 shows the estimated coefficients for policy expectations at different horizons.

We document that for FOMC statements in which the signals about the present and future policy stance are consistent – *i.e.* when the signals point in the same direction – the estimated coefficients are strong for current-quarter expectations (ED1) and decrease with the horizon (the coefficient for ED4 is barely significantly different from zero). This suggests that most of the information conveyed in these cases is about the short-end of the term structure of expectations. In contrast, for FOMC statements with conflicting signals about the present and future stance – *i.e.* when Target and Path surprises point in opposite directions – the coefficients on FF1 and ED1 (the short-end) are small, not significant, and then they increase strongly with the horizon. Said differently, in these cases, Eurodollar futures at longer maturities are more correlated to the monetary surprise than shorter-maturity ones. This means that when signals about the present and future stance contradict, what dominates in the adjustments of policy expectations is the information about the future policy stance. The coefficient for ED4 is statistically different from the one of "same sign" monetary surprises. This is very different from the pattern shown in Figure 2.

[10] An easing Target surprises with a tightening Path surprises would produce a steepening – the inverse a flattening.

Figure 3: The life-cycle of policy expectations: consistent vs. conflicting signals



Note: This figure represents the estimated coefficients of Equation 2 of the two different subsamples of FOMC statements with same sign vs. opposite sign Target and Path surprises. The right-hand side variable is the *news-adjusted* monetary surprises of Bauer and Swanson (2023a) while the the right-hand side variables are the policy expectations at different maturities (from current-month to one-year ahead).

Overall, for two monetary surprises of equivalent magnitude, the one based on consistent signals will load on the short-end whereas the one with conflicting signals will load more on the longer-end. The even more important take-away relates to the life-cycle of policy expectations across these maturities. The *decreasing shape* towards zero we observe in Figure 3 for consistent signals suggests that these statements do not indicate any dynamic/prolonged change in the future. For example, a surprising decision to raise policy rates today leads futures to increase in the short-end, but with no expectation of further tightening decisions. In contrast, the *increasing shape* we observe for conflicting signals suggests that the monetary surprises of these statements are viewed as relevant information that gains importance into the future. When policy expectations adjust further out in the future, it suggests that investors interpret the policy statement as signaling a more persistent change in the monetary policy stance that amplifies over time.

Monetary policy transmission. We now examine the extent to which the response of asset prices to monetary policy surprises varies according to whether signals about the current and future policy stance are consistent or conflicting. To this end, we adjust Equation 1 to measure the heterogeneous effects of monetary surprises conditional on the two cases: we interact monetary surprises with the dummy identifying policy announcements with conflicting signals ($\mathbb{1}^{\text{Opp}} = 1$):

$$\Delta Y_t = \alpha + \beta_1 \cdot MPS_t + \beta_2 \cdot MPS_t \cdot \mathbb{1}_t^{\text{Opp}} + \beta_3 \cdot \mathbb{1}_t^{\text{Opp}} + \epsilon_t \tag{5}$$

where Y_t denotes either S&P500 prices, nominal yields at different horizons, or the VIX. The results are shown in Table 2. The first row shows the effects of monetary policy surprises on the subsample of policy announcements when Target and Path surprises send consistent signals. The negative effect on stock prices and the positive effects on 2-year rates and the VIX corresponds to the standard effects of monetary policy. The second row shows the estimated parameter for the interaction term when news about the current and future policy stance diverges. This marginal

effect of monetary surprises on interest rates (2, 5 and 10-year rates) is positive, strong, highly significant and much larger than the effect of monetary surprises with consistent signals. To facilitate reading, we provide the average effect of monetary surprises for the subset of FOMC statements when target and path have opposite signs. This effect is close to unity for 2- and 5-year rates. It is almost 10 times higher than in the subsample of consistent signals for 10-year rates.

Table 2: Monetary policy effects with consistent or conflicting signals

	S&P500	2y	5y	10y	VIX
MPS_t	-7.834**	0.393**	0.285	0.057	9.683**
	[3.54]	[0.20]	[0.19]	[0.16]	[4.36]
MPS_t x $\mathbb{1}^{Opp}$	6.526	0.521**	0.553**	0.519**	-7.128
	[4.69]	[0.23]	[0.24]	[0.22]	[5.78]
$MPS_t \mid \mathbb{1}^{Opp} = 1$	-1.308	0.914***	0.838***	0.576***	2.555
	[3.08]	[0.11]	[0.15]	[0.15]	[3.79]
R^2	0.06	0.26	0.15	0.07	0.03
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 5 is estimated using OLS. Only the main parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-, 5- and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the effects of monetary surprises for *same sign* statements. The second row shows the marginal effects of these monetary surprises for *opposite sign* cases. The last row ($MPS_t \mid \mathbb{1}^{Opp} = 1$) shows the average effect of monetary surprises for *opposite sign* statements.

These results are in line with the main message of Figure 2. The sample of FOMC statements with conflicting signals is characterized by an increasing shape of policy expectation adjustments with horizons. As these statements contain more information about the future, these monetary surprises have much larger effects on long-term nominal yields. This is a first important finding of this paper: the underlying structure of news about the current versus future policy stance in monetary surprises shapes the transmission of these monetary surprises to asset prices. Policy announcements with consistent signals have no effects on long-term yields. Only policy announcements with conflicting signals affect long-term interest rates.

Table 3: Descriptive statistics for monetary surprises

	N	%	Mean	Mean Abs.	SD
SameSign	88	47%	0.004	0.038	0.032
OppSign	100	53%	0.004	0.031	0.032

Note: This table shows the total number and percentage of FOMC meetings for which Target and Path surprises move in the same direction (*SameSign MPS*), or in opposite directions (*OppSign MPS*). It also shows the mean, the absolute value mean, and the standard deviation of these monetary surprises.

One potential concern is that the distribution of monetary surprises across these two subsamples is not uniform. Table 3 presents the descriptive statistics for the two samples of *consistent* vs. *conflicting* statements. Over the 188 policy announcement days, the shares are very much comparable (47% for same sign and 53% for opposite signs). More importantly, one can clearly see

that monetary surprises in the two samples are indistinguishable in terms of their magnitude or variability. This suggests that the result in Table 2 is not driven by composition effects (*i.e.* larger surprises that may have larger effects).

A natural extension of our classification is to explore the extent to which conflicting signals are driven by predominant information about the current policy stance or predominant information about the future policy path. In the next section, we therefore complement our sign-classification with the magnitude dimension.

3.2 The role of future-dominated statements

Two monetary surprises of the same magnitude may convey a different mix of information about the present and the future. We now sort monetary surprises associated with the 188 statements according to the relative magnitude (in absolute terms) of their Target and Path surprises. In practice, we simply distinguish between (i) statements with a larger Path surprises and (ii) those with a larger Target surprise, and define the following variable $\mathbb{1}_t^{\text{Path}}$:

$$\mathbb{1}_t^{\text{Path}} = \begin{cases} 1 \text{ if } |Path_t| \geq |Target_t| \\ 0 \text{ if } |Path_t| < |Target_t| \end{cases} \tag{6}$$

This second dimension tells us the extent to which information about the *current* or *future* policy stance matters most in the policy announcement. In the previous section, we showed that statements with conflicting signals mattered for the transmission of monetary policy. But the nature of the conflicting signals could be driven by two very different situations that this second dimension helps uncover. If Target and Path surprises have the same sign, it tells us which type of news – about the current or future stance – contributes the most to the overall monetary surprise. If Target and Path surprises have opposite signs, it indicates which component drives the stance of the overall monetary surprise.

On the one hand, if Target and Path surprises have opposite signs and the Target surprise is larger than the Path surprise, the change in the slope of the term structure of policy expectations is predominantly driven by the short-end and larger news about the present. For instance, this would correspond to a policy meeting where a hike was expected and did not take place, but the language was surprisingly slightly more hawkish for the future outlook. In this case, the Path surprise only *attenuates* the (opposite) Target surprise and the dummy $\mathbb{1}_t^{\text{Att}}$ equals one:

$$\mathbb{1}_t^{\text{Att}} = \begin{cases} 1 \text{ if } \mathbb{1}_t^{\text{Opp}} = 1 \text{ and } \mathbb{1}_t^{\text{Path}} = 0 \\ 0 \text{ if } \mathbb{1}_t^{\text{Opp}} = 1 \text{ and } \mathbb{1}_t^{\text{Path}} = 1 \end{cases} \tag{7}$$

Alternatively, if Target and Path surprises have opposite signs and the Path surprise is larger than the Target surprise, the change in the slope of the term structure of policy expectations is predominantly driven by the longer-end and larger news about the future policy stance. For instance, this would correspond to a meeting where policy expectations slightly overestimated the current decision (an easing surprise), but signals about the future outlook were surprisingly very hawkish. Appendix Figure A1 shows the life-cycle of policy expectations for these *future-*

dominated statements. In this case, the Path surprise *dominates* the (opposite) Target surprise, and the dummy $\mathbb{1}_t^{\text{Dom}}$ equals one:

$$\mathbb{1}_t^{\text{Dom}} = \begin{cases} 1 \text{ if } \mathbb{1}_t^{\text{Opp}} = 1 \text{ and } \mathbb{1}_t^{\text{Path}} = 1 \\ 0 \text{ if } \mathbb{1}_t^{\text{Opp}} = 1 \text{ and } \mathbb{1}_t^{\text{Path}} = 0 \end{cases} \tag{8}$$

We can now jointly test how the magnitude dimension adds to the sign dimension examined in the previous section. Over the 100 "opposite sign" statements, 68 are future-dominant and 32 are attenuation cases. We use this updated classification to test for the heterogeneous effects of monetary surprises on asset prices based on the following specification:

$$\Delta Y_t = \alpha + \beta_1 \cdot MPS_t + \beta_2 \cdot MPS_t \cdot \mathbb{1}_t^{\text{Att}} + \beta_3 \cdot MPS_t \cdot \mathbb{1}_t^{\text{Dom}} + \beta_4 \cdot \mathbb{1}_t^{\text{Att}} + \beta_5 \cdot \mathbb{1}_t^{\text{Dom}} + \epsilon_t \tag{9}$$

Table 4: Monetary policy effects with future-dominated signals

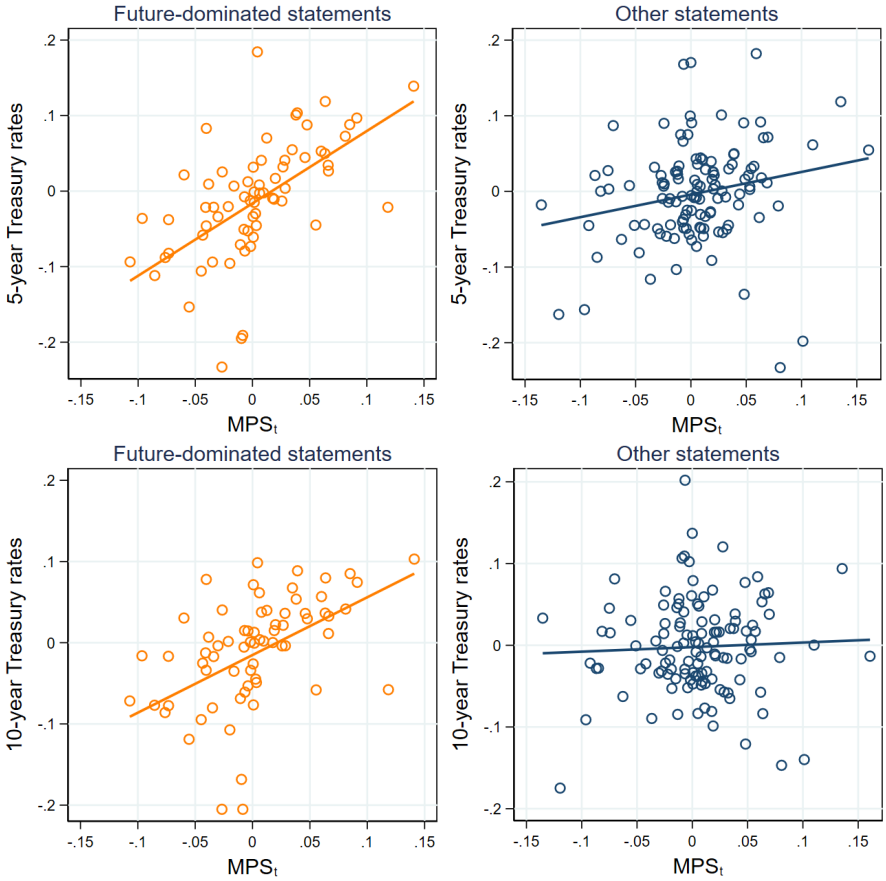
	S&P500	2y	5y	10y	VIX
MPS_t	-7.834**	0.393**	0.285	0.057	9.683**
	[3.56]	[0.20]	[0.19]	[0.16]	[4.38]
MPS_t x $\mathbb{1}^{\text{Att}}$	14.163**	0.192	0.060	-0.032	-11.831
	[7.00]	[0.37]	[0.31]	[0.25]	[12.54]
MPS_t x $\mathbb{1}^{\text{Dom}}$	4.496	0.602***	0.673***	0.654***	-6.351
	[4.74]	[0.22]	[0.25]	[0.23]	[5.51]
$MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$	-3.338	0.995***	0.958***	0.711***	3.331
	[3.14]	[0.10]	[0.16]	[0.16]	[3.34]
R^2	0.07	0.27	0.17	0.10	0.04
R^2 Other	0.04	0.10	0.05	0.00	0.03
R^2 Fut-Dom	0.02	0.49	0.26	0.16	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect of monetary surprises for *attenuating* cases. The third row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table 4 shows estimated coefficients of Equation 9. First, the traditionally identified effect on stock prices (S&P500), short-term nominal yields (2-year rates) and risk measures (VIX) comes from the subset of FOMC meetings with consistent signals, *i.e.* Target and Path surprises pointing in the same direction. Second, we do not find much effects of monetary surprises for statements when the Path surprise only attenuates the Target surprise. The positive response of stock prices suggests a central bank information channel rather than standard monetary policy effects. Third, and strikingly, the entire transmission of monetary surprises to long-term yields (5- and 10-year

rates) comes from the subset of FOMC statements where the Path surprise *dominates* the Target one, *i.e.* when they have opposite signs and the Path surprise has a stronger magnitude. The size of the effects is several times larger for *future-dominated* statements (0.711 for 10-year rates, for instance) compared to all other types of statements with consistent or attenuating signals (0.057 and -0.032 respectively).

Figure 4: Interest rates and monetary surprises



Note: These figures plot the daily changes in nominal yields (y-axis) for 5-year (upper) and 10-year rates (bottom) against monetary surprises of Bauer and Swanson (2023a) (x-axis) for all 188 FOMC statements in our sample. The orange dots in the upper panel represent the *future-dominated* FOMC meetings while the blue dots in the lower panel represent the non-*future-dominated* FOMC meetings. This classification is based on Target and Path surprises derived from Gürkaynak et al. (2005b).

It is important to highlight that the fraction of the explained variance of nominal yields is much higher for these future-dominated statements. Monetary surprises explain 49, 26 and 16% of the variance of 2-, 5- and 10-year rates for those statements compared to 10, 5 and 0% for the other types of statements (with consistent or attenuating signals). As a complement, we visually inspect the relationship between monetary surprises and nominal yields (5-year and 10-year) in Figure 4. We plot this separately for *future-dominated* statements (left panel) and for the other statements –*i.e.* statements with *consistent* or *attenuating* signals – (right panel). We observe (i) a much steeper relationship for *future-dominated* statements than for other statements, and (ii) the data points for *future-dominated* statements cluster more tightly around the regression line than for other statements, indicating a more meaningful relationship.

The main result of this paper is that the transmission of monetary policy to (long-term) interest rates is very effective when (i) signals about the current and future policy stance conflict, and (ii) when signals about the future stance dominates those about the current stance. Most, if not all, of the effect of monetary policy on long-term rates comes from these FOMC statements specifically. In contrast, these *future-dominated* statements do not convey information for stock prices and risk measures, that do not react to these monetary surprises. This set of statements appears particularly informative about the long-term outlook.

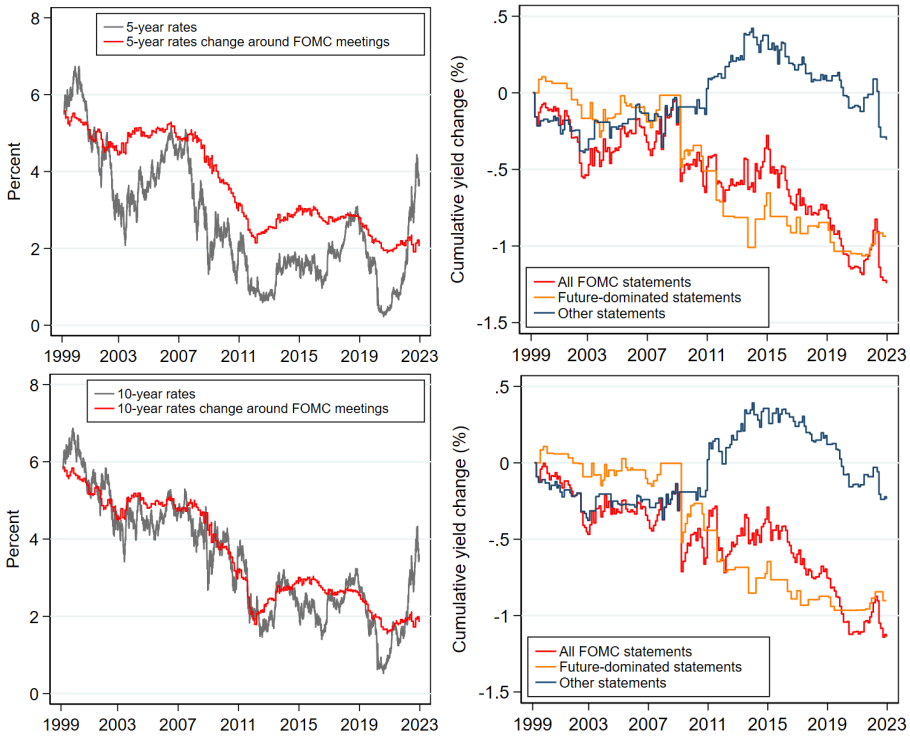
Table 5: The effect of monetary policy surprises on nominal yields at all maturities

	1y	2y	3y	4y	5y	6y	7y
MPS_t	0.395**	0.393**	0.372*	0.334*	0.285	0.232	0.181
	[0.16]	[0.20]	[0.20]	[0.20]	[0.19]	[0.18]	[0.18]
MPS_t x $\mathbb{1}^{\text{Dom}}$	0.294	0.602***	0.681***	0.684***	0.673***	0.666***	0.662***
	[0.19]	[0.22]	[0.24]	[0.25]	[0.25]	[0.25]	[0.25]
$MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$	0.689***	0.995***	1.052***	1.018***	0.958***	0.898***	0.843***
	[0.09]	[0.10]	[0.12]	[0.14]	[0.16]	[0.17]	[0.17]
R^2	0.27	0.27	0.24	0.2	0.17	0.14	0.12
R^2 Other	0.16	0.10	0.08	0.06	0.05	0.03	0.02
R^2 Fut-Dom	0.46	0.49	0.41	0.32	0.26	0.22	0.19
	8y	9y	10y	15y	20y	25y	30y
MPS_t	0.134	0.093	0.057	-0.057	-0.106	-0.13	-0.145
	[0.17]	[0.17]	[0.16]	[0.16]	[0.15]	[0.15]	[0.16]
MPS_t x $\mathbb{1}^{\text{Dom}}$	0.660***	0.658***	0.654***	0.593***	0.493**	0.396*	0.319
	[0.24]	[0.24]	[0.23]	[0.21]	[0.20]	[0.21]	[0.24]
$MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$	0.794***	0.751***	0.711***	0.536***	0.387***	0.266*	0.174
	[0.17]	[0.17]	[0.16]	[0.14]	[0.13]	[0.15]	[0.17]
R^2	0.11	0.1	0.1	0.08	0.06	0.05	0.05
R^2 Other	0.01	0.01	0.00	0.00	0.01	0.01	0.02
R^2 Fut-Dom	0.17	0.16	0.16	0.15	0.12	0.07	0.02

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a) over the 188 FOMC meetings of our sample. Equation 9 is estimated using OLS. Only the main parameters of interest are reported. The dependent variables are the nominal yields for maturities from 1 year to 10 years and at 15, 20, 25 and 30 years. The first row shows the estimated effects of monetary surprises for *same sign* statements. The second row shows the marginal effect of monetary surprises for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effect for these latter statements. The classification of statements is based on Target and Path surprises derived from Gürkaynak et al. (2005b). The R2 are computed from regressions for each subsample.

We extend the analysis of how *future-dominated* statements matter for interest rates to various maturities, each from 1 to 10 years and at 15, 20, 25 and 30 years. Table 5 shows the estimated effects of monetary surprises based on Equation 9. We observe that the heterogeneous transmission is at work for all maturities, from 2 to 25 years. While the effect of monetary surprises on interest rates over non-*future-dominated* statements is small, and non-significant in most cases, the effect from *future-dominated* statements is strong and highly significant. It decreases at the 15-year horizon, becomes less precisely estimated at the 25-year horizon, and null at the 30-year horizon. Long-term interest rates being key for most economic decisions, either for households or firms, these results suggest that a large part of the effects of monetary policy on the economy comes from these specific statements that contain particularly important news for the future.

Figure 5: Interest rate dynamics around FOMC meetings



Note: The figures on the left panel plot the evolution of the 5-year (upper) and 10-year (bottom) Treasury rates in grey and the hypothetical time series constructed with only the yield changes in a 3-day window around FOMC meetings in red, as in Hillenbrand (2025). The figures on the right panel show a decomposition of this hypothetical time series on FOMC statement days (red line) between future-dominated statements (orange) and other statements (blue).

In order to highlight the importance of future-dominated statements for longer-term interest rates, we further explore the main result of Hillenbrand (2025) that changes in long-term Treasury rates are entirely driven by FOMC days compared to non-FOMC days. The left panel of Figure 5 replicates and confirms this finding for 5- and 10-year rates: the dynamics of these interest rates is well captured by changes around FOMC meetings. We then decompose this cumulative yield change over all statements of our sample between future-dominated and other statements (right panel). We show that most of the dynamics of long-term interest rates that is captured by changes on FOMC announcement days is driven by changes from future-dominated statements specifically.[11] These statements matter both at the high-frequency (daily or intraday) but also for low-frequency movements in interest rates.

3.3 Alternative mechanisms and confounding factors

The stronger effect of monetary surprises in *future-dominated* statements could also be due to some confounding factors. We cannot rule out the possibility that our classification, in selecting these

[11] These figures visually suggest a potential break around 2009. We estimate Equation 9 on two subsamples pre and post 2009 in Appendix Table A2 and find similar results to those in Table 4. The effect of monetary surprises on longer-term interest rates is more pronounced in presence of future-dominated statements.

statements, actually captures some other correlated dimensions that would explain the stronger pass-through of monetary policy to interest rates. For instance, it is possible that these statements serve as a proxy for periods of lower uncertainty, during which the effect of monetary policy on interest rates is relatively stronger than in periods of higher uncertainty (Tillmann, 2020).

Unconventional policy announcements. Quantitative Easing (QE) or forward guidance (FG) announcements contain by nature a strong forward-looking component. Over our sample period, the Fed calibrated its time- or state-dependent forward guidance to lower long-term rates. QE purchases put similar pressure on yields (Krishnamurthy and Vissing-Jorgensen, 2011, Christensen and Rudebusch, 2012, D'Amico, English, López-Salido, and Nelson, 2012). The *future-dominated* statements might thus happen when these unconventional policies were announced, in such a way that we capture the effects of these policies. To control for that, we consider unconventional monetary policy announcements related to QE from the list of Corbet, Dunne, and Larkin (2019). We use the timeline provided by the Federal Reserve on policy actions and communication for FG announcements.[12] We add a linear and interacted term in Equation 9 to control for these confounding factors and confirm that it does not affect our results (see Appendix Table A3).

Central bank information effects. We consider the possibility that monetary surprises contain signals about future economic conditions (Cieslak and Schrimpf, 2019, Jarociński and Karadi, 2020, Miranda-Agrippino and Ricco, 2021). This central bank information channel could lead to revisions in long-term interest rates. We therefore replicate our results using Jarociński and Karadi (2020)'s series adjusted for central bank information effects. Appendix Table A5 shows that our main results hold.

Press Conferences. Since 2011, the Fed has held a press conference at meetings at which it releases the (quarterly) Summary of Economic Projections (SEP). Since 2018, a press conference has been held after each meeting. The press conference starts with an opening statement followed by a Q&A session during which journalists ask clarifying questions, often on future actions or policy shifts. There is ample evidence of sizable market reactions during the press conference, comparable to, and sometimes even greater than those to FOMC statements (Ehrmann and Fratzscher, 2009, De Pooter, 2021, Gorodnichenko, Pham, and Talavera, 2023, Swanson and Jayawickrema, 2024, Narain and Sangani, 2025). Even when controlling for the occurrence of press conferences, estimates confirm our main results (see Appendix Table A6).

Publication of FOMC projections. While central bank projections have been shown to affect private beliefs (Hubert, 2015), the SEP, published since 2007, contains FOMC participants' longer-run projections for GDP, inflation, and the unemployment rate, as well as the future path of "appropriate" monetary policy. It is therefore likely to influence long-term nominal yields. In Appendix Table A7, we show that the stronger effect of monetary surprises from *future-dominated* statements holds beyond the publication of these FOMC projections.

Monetary policy uncertainty. By definition, *future-dominated* statements happen when the Target and Path factors move in opposite directions, *i.e.* when there is conflicting news about the current and future policy stance. These statements could then reflect a heightened policy uncertainty. Controlling for the market-based measure of monetary policy uncertainty of Bauer, Lakdawala,

[12] https://www.federalreserve.gov/monetarypolicy/timeline-forward-guidance-about-the-federal-funds-rate.htm.

and Mueller (2022) does not eliminate our main result (see Appendix Table A8). This finding is also robust to a measure of financial uncertainty such as the VIX (Table A9). The interest rate skewness measure of Bauer and Chernov (2024) captures the balance of interest rate risks (the asymmetry in the probability distribution of interest rate changes). Intuitively, a positive skewness indicates that large rate hikes are more likely than large rate cuts, so that the balance of risk is tilted to the upside and reflects macroeconomic risk. As such, it may contain information about the uncertainty on the likely direction of future interest rate changes. Even after controlling for interest rate skewness (Table A10), the key role of *future-dominated* statements remains.

Large news about the future. The larger magnitude of the path factor over the target factor is one of the two characteristics of *future-dominated* statements. Therefore, by construction, the Path surprise tends to be relatively large for *future-dominated* statements (regardless of its sign). We test whether what our results capture from these *future-dominated* statements characterized by both conflicting signals and dominant forward-looking information matters above and beyond just a (relatively) large path surprise (*i.e.*, statements that convey a lot of information about the future policy). We control for when the Path factor (in absolute value) is above its 75th percentile (regardless of the magnitude of the Target factor) in Table A11. We find a more moderate effect in such cases (consistent with the fact that we remove some of the content of *future-dominated* statements), but the marginal effect of *future-dominated* statements remains strong and significant.

Table 6: Monetary policy effects in a narrow window

	S&P500	2y	5y	10y	30y
MPS_t	-6.890***	0.683***	0.529***	0.305***	0.037
	[1.23]	[0.10]	[0.11]	[0.08]	[0.06]
MPS_t x $\mathbb{1}^{\text{Att}}$	3.754	-0.157	-0.067	-0.080	0.086
	[3.13]	[0.14]	[0.15]	[0.12]	[0.13]
MPS_t x $\mathbb{1}^{\text{Dom}}$	1.380	0.371***	0.532***	0.467***	0.556***
	[1.80]	[0.12]	[0.15]	[0.13]	[0.12]
$MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$	-5.511***	1.054***	1.061***	0.771***	0.594***
	[1.32]	[0.07]	[0.11]	[0.10]	[0.11]
R^2	0.31	0.68	0.53	0.37	0.22
R^2 Other	0.32	0.56	0.38	0.24	0.01
R^2 Fut-Dom	0.24	0.78	0.62	0.42	0.29
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the 30-min change around FOMC announcements in the S&P500 in column (1), the 2-, 5- 10- and 30-year nominal yields in columns (2), (3), (4) and (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect of monetary surprises for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

3.4 Asset price responses in a narrow window

The evidence provided in Table 4 is based on daily changes in asset prices. Hanson and Stein (2015) suggest some reasons for which using lower-frequency changes can be preferable (information processing delays, reversals in market momentum, etc). However, using higher-frequency intraday changes helps avoiding potential confounding events (the release of some macroeconomic data on the same day, for instance) and circumventing the pre-FOMC announcement drift (Lucca and Moench, 2015). We therefore estimate Equation 9 with 30-min changes in asset prices around the FOMC announcement (data are taken from Bauer and Swanson, 2023b).

Table 6 shows the estimated effects. Although long-term interest rates respond to monetary surprises in non-*future-dominated* statements over this narrow window, the marginal effect of monetary surprises from *future-dominated* statements remains very strong and highly significant, such that the average effect of monetary policy on interest rates during these meetings is extremely powerful. The explained variance within this 30-min narrow window is mechanically higher for all statements, but is much larger for *future-dominated* statements than the other statements, as evidenced previously.

3.5 Alternative measures of monetary surprises and classifications

So far, we have shown that a subset of FOMC meetings is crucial for the transmission of monetary policy to interest rates. We have used Target and Path surprises as originally defined by Gürkaynak et al. (2005b) for our classification of FOMC meetings and we have established this result based on the *news-adjusted* monetary surprises from Bauer and Swanson (2023a).

Table 7: The effect of an alternative measure of monetary surprises

	S&P500	2y	5y	10y	VIX
NS18	-10.308*	0.688***	0.496**	0.188	11.543*
	[5.28]	[0.19]	[0.22]	[0.23]	[6.20]
NS18 x $\mathbb{1}^{\text{Dom}}$	3.774	1.456***	1.573***	1.330***	-1.604
	[8.95]	[0.29]	[0.42]	[0.44]	[10.04]
NS18 $\mid \mathbb{1}^{\text{Dom}} = 1$	-6.534	2.144***	2.070***	1.518***	9.938
	[7.22]	[0.22]	[0.36]	[0.38]	[7.89]
R^2	0.06	0.33	0.20	0.12	0.04
R^2 Other	0.05	0.16	0.07	0.02	0.02
R^2 Fut-Dom	0.02	0.58	0.31	0.18	0.02
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of *news shock* of Nakamura and Steinsson (2018). Equation 9 is estimated using OLS. The dependent variables are the daily return on the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* statements. The second row shows the marginal effect of monetary surprises for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effect for the latter. The classification of statements is based on Target and Path surprises derived from Gürkaynak et al. (2005b). The R2 are computed from regressions for each subsample.

We first examine whether our main finding holds when using alternative measures of monetary surprises. In Table 7, we estimate Equation 9 using the series of Nakamura and Steinsson (2018).

We also find that the transmission of monetary policy to nominal yields is much stronger in the subset of policy announcements where news about the future are larger and diverge from news about the present. We also replicate the results shown in Table 7 using measures from Gürkaynak et al. (2005b), Jarociński and Karadi (2020) and the unadjusted monetary surprises from Bauer and Swanson (2023a). These results are presented in Appendix Tables A12, A13 and A14. The key role of *future-dominated* statements for monetary policy transmission to long-term yields holds across all these alternative measures.

Second, we explore whether our result is sensitive to the classification of *future-dominated* statements derived from the Target and Path surprises of Gürkaynak et al. (2005b). It is possible to isolate *future-dominated* statements using a classification based on the the unexpected change in the Fed funds rate ("FFR shock") and policy news shock series ("News shock") from Nakamura and Steinsson (2018). These two measures can also be used to disentangle news about the current versus future policy stance, although in a slightly noisier way. The News shock is a composite measure of changes in policy expectations at different maturities up to one year, so it includes the influence of changes in the current stance.[13] Using these two series to classify statements, we end up with a smaller subset of *future-dominated* policy announcements – possibly because the policy news shock is a noisier measure for our purpose.[14] While we identify 68 *future-dominated* statements using the Target and Path surprises, we identify 24 *future-dominated* statements using Nakamura and Steinsson (2018)'s series. One advantage though of using these series is that it makes the classification even more conservative.

Table 8: Monetary policy effects based on an alternative classification

	S&P500	2y	5y	10y	VIX
MPS_t	-7.569***	0.544***	0.471***	0.254*	8.762***
	[2.60]	[0.15]	[0.15]	[0.13]	[3.21]
MPS_t x $\mathbb{1}^{Dom}$	11.545*	0.581***	0.588***	0.498***	-11.553**
	[6.54]	[0.18]	[0.20]	[0.19]	[5.85]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	3.975	1.125***	1.059***	0.752***	-2.790
	[6.01]	[0.09]	[0.13]	[0.13]	[4.89]
R^2	0.08	0.26	0.14	0.07	0.04
R^2 Other	0.05	0.16	0.08	0.02	0.03
R^2 Fut-Dom	0.04	0.70	0.63	0.52	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of monetary surprises from Nakamura and Steinsson (2018) – the *news shock*. Equation 9 is estimated using OLS. The dependent variables are the daily return on the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for*same sign* statements. The second row shows the marginal effect of monetary surprises for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effect for the latter. The classification of statements is based on the FFR and News shock series of Nakamura and Steinsson (2018). The R2 are computed from regressions for each subsample.

Table 8 shows the estimates of Equation 9 with this alternative classification. In Appendix Table A15, we replicate this estimation using both this alternative classification and Nakamura and

[13] Their first principal component can be viewed as a weighted average of the target and path factors.
[14] Appendix Figure A2 shows that our classification with these series also isolates statements about the future effectively.

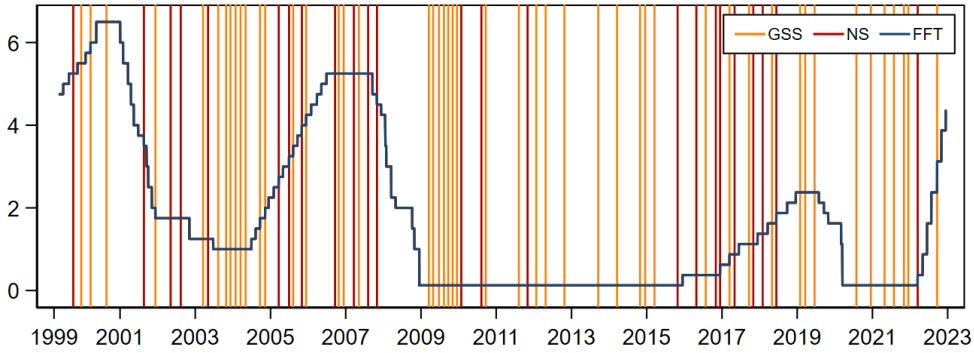
Steinsson (2018)'s measure of monetary surprises as the right-hand side variable. The main finding fully holds despite the small sample of *future-dominated* statements. The estimated coefficients are significantly larger than those estimated based on the classification that uses Target and Path surprises from Gürkaynak et al. (2005b), but this is orthogonal to our classification of statements. Indeed, the larger elasticities are embedded in surprises themselves: this difference in the size of the coefficients appears from estimating Equation 1 – the standard linear case. In addition, the coefficients for the 5- and 10-year nominal yields associated with non-*future-dominated* statements in Table 4 are 0.285 and 0.057 when using series from Bauer and Swanson (2023a) whereas they are twice larger (0.496 and 0.188) in Table 8 with the series of Nakamura and Steinsson (2018).

The 24 statements identified as *future-dominated* using series from Nakamura and Steinsson (2018) are not a perfect subset of the 68 *future-dominated* statements originally identified with Target and Path surprises. Some meetings are classified as *future-dominated* statements in one case, but not in the other. Interestingly, if we consider the intersection of these two subsets of statements and replicate our estimations on the common set of 19 *future-dominated* statements, we still find an heterogeneous effect of monetary surprises on interest rates with a much stronger impact from these statements, as shown in Appendix Table A16. Note that monetary surprises explain from 50% to 70% of the variance of nominal yields over these 19 meetings.

3.6 When do these future-dominated statements happen?

As future-dominated statements convey information about the future policy stance, a natural question is whether they cluster around turning points in monetary cycles. Figure 6 plots the distribution of these statements over time according to our two classifications: the baseline one based on the target and path factors of Gürkaynak et al. (2005b), and the one using the series of Nakamura and Steinsson (2018). These statements are scattered throughout the sample period.

Figure 6: Distribution over time of *future-dominated* statements



Note: This figure plots the distribution of *future-dominated* statements over time, using two classifications. In grey, we identify these statements using the Target and Path factors derived from Gürkaynak et al. (2005b) and in red, we use the FFR and news shocks of Nakamura and Steinsson (2018). The blue line represents the Federal Fund Target (FFT), taking the middle point of the range after 2009.

Using a probit model described in Appendix Equation 15, we estimate the likelihood of observing a *future-dominated* statements based on different characteristics of the meeting or the decision, and of the environment (the level of monetary policy uncertainty, for instance). Table A17 in Appendix shows the results of these regressions. We find a higher probability of *future-dominated*

statements when there is a *status quo* decision and a forward guidance announcement. Periods of heightened monetary policy uncertainty also makes future-dominated statements more likely. Future-dominated statements can be seen to appear as clear signals reducing this uncertainty, which may explain their strong effects. Finally, we find that future-dominated statements are less likely to occur around turning points in the US monetary policy cycle, suggesting that their information content is not about the initiation of a tightening or easing cycle.

4 The information content of future-dominated statements

Our estimates show that monetary surprises have strong effects on long-term interest rates with *future-dominated* statements. As monetary policy only has temporary effects on real variables, what drives monetary policy influence on long-term interest rates? The literature has explored different channels, from the effect on risk premium to private agents learning about the parameters of the central bank reaction function. In this section, we investigate the underlying nature of the information that investors learn from these specific statements.

4.1 What do asset prices co-movements suggest?

We use the sign of the co-movement in asset price responses to gain insight about the nature of the news driving policy expectations adjustments, in the spirit of Cieslak and Pang (2021). This type of sign identification based on the co-movements between yields, stock prices and the VIX has been widely used to distinguish between monetary news, central bank information effects (growth news) and risk premium shocks (Cieslak and Schrimpf, 2019, Jarociński and Karadi, 2020 and Bianchi, Ludvigson, and Ma, 2004). We summarize the expected co-movements in asset prices for the different types of underlying news in Table 9.

Table 9: Identification through sign of co-movement

	Short-term MP	CBI/Growth news	Risk premium	Reaction function
ST yield	+	+		
LT yield			+	+
Stock prices	−	+	−	o
VIX			+	o

Note: This table shows the co-movement in the sign of asset price responses to different underlying news conveyed by a tightening monetary surprise, in the spirit of Cieslak and Pang (2021). Each row corresponds to an asset price reaction and each column to the possible underlying nature of the news driving these co-movements in asset price reactions. *Short-term MP* refers to the standard monetary policy shock; *CBI/Growth news* refers to news about the state of the economy; *Risk premium* refers to news affecting risk premium; and finally *Reaction function* refers to news about the reaction function of the central bank.

Learning about the current monetary policy stance implies a positive effect of monetary surprises on short-term yields and a negative effect on stock prices (Column 1 of Table 9). As monetary shocks are temporary in nature, long-term rates should be unaffected. If monetary surprises convey growth news, they should affect positively both stock prices and short-term yields (Column 2 of Table 9). This is the key mechanism of Jarociński and Karadi (2020). We find no effect on the S&P500, but a strong positive effect on long-term rates, suggesting that the underlying signals in future-dominated statements are not about the current policy stance or the state of the economy.

When monetary surprises affect long-term yields, they could contain information about the risk premium, or about the central bank reaction function. The risk premium is a compensation for discount rate news exposure, *i.e.*, for an uncertain future path of interest rates. As the discount rate affects the present value of future cash-flows, there should be a positive co-movement between long-term interest rates and volatility measures such as the VIX, and a negative co-movement with stock prices (Column 3 of Table 9). In contrast, news about the central bank reaction function refer to new information about parameters of its policy rule: the level of the inflation target or how the central bank will adjust its policy rate in response to changes in the economy. It does not directly affect the discount rate, so it is not directly related to uncertainty or stock prices (Column 4 of Table 9). The strong observed responses of long-term yields combined with the absence of reactions of stock prices and the VIX seems to suggest that the underlying news conveyed in these *future-dominated* statements is primarily about the central bank reaction function. In the next subsection, we test this hypothesis in a more direct way.

4.2 Expectation hypothesis versus term premium

The Expectation Hypothesis theory allows us to decompose nominal yields into two components (see, for instance, Adrian, Crump, and Moench, 2013): (i) the expectation of future short-term interest rates component, representing the average of expected future short-term interest rates from the present to the maturity of the long-term bond, and (ii) a term premium component. We use this decomposition to directly test whether the effect of monetary surprises in *future-dominated* statements operates through the expectations of future short-term interest rates. To do so, we rely on zero-coupon nominal Treasury yields and instantaneous forward rates.[15] To get the expectations of the future path of short-term rates component, we regress zero coupon nominal interest rates i_t^k at maturities k of 2-, 5- and 10-year on their corresponding forward rates f_t^k:

$$i_t^k = \alpha + \beta \cdot f_t^k + \epsilon_t^k \tag{10}$$

The fitted values of these regressions, $\hat{i}_t^k$, serve as a proxy for the expectation hypothesis (EH) component, while the estimated residuals, $\hat{\epsilon}_t^k$, act as a proxy for the term premium component. We then regress each component at each horizon on monetary surprises, following the specification outlined in Equation 9. We present the results in Table 10, and the first three columns reproduce the baseline results from Table 4.

Columns 4 to 6 show the effect of monetary surprises on the expectation hypothesis component. We find that a 10 bp tightening in monetary policy from a *future-dominated* statement has a significant positive impact of 5 to 10 bp on the EH component. In contrast, we find no discernible effect on the term premium (Columns 7 to 9). This suggests that *future-dominated* statements primarily convey information about future short-term rates rather than information affecting risk perceptions. In contrast, when FOMC statements convey consistent signals (first line of Table 10), monetary policy affects long-term interest rates through the term premium, consistent with the findings of Hanson and Stein (2015). Our results indicate that the standard effects of monetary

[15] These data are available at http:// www.federalreserve.gov/pubs/feds/2006/200628/200628abs.html and have been constructed by Gürkaynak, Sack, and Wright (2007).

Table 10: Decomposition of nominal interest rates: expectation hypothesis and term premium

	Nominal interest rates			Expectation Hypothesis			Term premium		
	2y	5y	10y	2y	5y	10y	2y	5y	10y
MPS_t	0.39**	0.29	0.06	0.39	0.03	-0.23	0.01	0.26**	0.29**
	[0.20]	[0.19]	[0.16]	[0.25]	[0.18]	[0.15]	[0.09]	[0.12]	[0.12]
MPS_t x $\mathbb{1}^{Dom}$	0.60***	0.67***	0.65***	0.96***	0.58**	0.50***	-0.36***	0.09	0.15
	[0.22]	[0.25]	[0.23]	[0.30]	[0.28]	[0.18]	[0.12]	[0.15]	[0.15]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	1.00***	0.96***	0.71***	1.34***	0.61***	0.27***	-0.35***	0.35***	0.44***
	[0.10]	[0.16]	[0.16]	[0.16]	[0.22]	[0.10]	[0.08]	[0.08]	[0.09]
R^2	0.27	0.17	0.10	0.21	0.05	0.05	0.08	0.13	0.13
R^2 Other	0.10	0.05	0.00	0.05	0.00	0.03	0.00	0.10	0.09
R^2 Fut-Dom	0.49	0.26	0.16	0.37	0.07	0.06	0.13	0.16	0.18
Obs.	188	188	188	188	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted MPS of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily changes in nominal yields at maturities 2-,5- and 10-year in columns (1),(2), and (3), their respective expectation hypothesis components in columns (4), (5) and (6), and their respective term premium components in columns (7), (8) and (9). The short-rate expectations and the term premium components are extracted by regressing the (spot) nominal rate to the corresponding forward rate as in Equation 10. The fitted values of these regressions are the expectation hypothesis component while the residual is the term premium component. The first row shows the estimated effects of monetary surprises for same sign statements. The second row shows the marginal effect of monetary surprises for future-dominated statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the estimated transmission of MPS to asset prices for *future-dominated* statements. The classification of statements into future-dominated and non-future dominated is based on the target and path factors derived from Gürkaynak et al. (2005b). The R2 are computed from regressions for each subsample.

policy on the term premium (see Appendix Table A18) also operate with these *same sign* statements. In these instances, monetary policy plausibly prompts yield-seeking investors to rebalance their portfolios toward long-term bonds to mitigate potential declines in their overall portfolio yield (Hanson et al., 2021).

4.3 Nominal versus real rates

The evidence presented in Section 4.2 suggests that investors learn about future short-term interest rates consistent with insights from Section 4.1. We now aim to explore more precisely the nature of the news that drives these movements in expectations of future short-term interest rates. We decompose nominal yields into their real component (using Treasury Inflation-Protected Securities, TIPS) and the inflation compensation component (measured with break-even inflation rates at equivalent maturities) to understand the information content of interest rate responses (Abrahams, Adrian, Crump, Moench, and Yu, 2016, D'Amico, Kim, and Wei, 2018).[16] This approach helps us shed light on what aspect of the reaction function investors learn about.

Table 11 presents estimates of Equation 9 with this decomposition. We find that the effect on long-term rates from *future-dominated* statements is primarily driven by a stronger transmission to real interest rates. Notably, there is no significant effect of monetary surprises on inflation compensation in these cases, suggesting that the observed changes in long-term nominal rates cannot be attributed to shifts in investors' beliefs about future inflation. These findings indicate that when

[16] These data are available at http:// www.federalreserve.gov/pubs/feds/2008/200805/200805abs.html and have been constructed by Gürkaynak, Sack, and Wright (2010).

Table 11: Decomposition of nominal interest rates: real rates and inflation compensation

	Nominal interest rates			**Real interest rates**			**Inflation compensation**		
	2y	5y	10y	2y	5y	10y	2y	5y	10y
MPS_t	0.39**	0.29	0.06	-0.51	0.19	0.12	0.91	0.09	-0.07
	[0.20]	[0.19]	[0.16]	[0.74]	[0.24]	[0.18]	[0.72]	[0.15]	[0.10]
MPS_t x $\mathbb{1}^{Dom}$	0.60***	0.67***	0.65***	1.50*	0.80**	0.60**	-0.90	-0.18	0.06
	[0.22]	[0.25]	[0.23]	[0.78]	[0.31]	[0.24]	[0.75]	[0.18]	[0.12]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	1.00***	0.96***	0.71***	0.99***	0.99***	0.72***	0.00	-0.03	-0.01
	[0.10]	[0.16]	[0.16]	[0.25]	[0.20]	[0.17]	[0.21]	[0.11]	[0.08]
R^2	0.27	0.17	0.10	0.06	0.14	0.11	0.06	0.04	0.07
R^2 Other	0.10	0.05	0.00	0.00	0.04	0.02	0.03	0.00	0.03
R^2 Fut-Dom	0.49	0.26	0.16	0.10	0.20	0.14	0.00	0.00	0.00
Obs.	188	188	188	188	188	188	188	188	188

Note: Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted MPS of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily changes in nominal yields at maturities 2-,5- and 10-year in columns (1),(2), and (3), their respective real rate components in columns (4), (5) and (6), and their respective inflation compensation components in columns (7), (8) and (9). The real interest rate component is derived from Treasury Inflation-Protected Securities (TIPS) and the inflation compensation component is derived from the break-even inflation rates. The first row shows the estimated effects of monetary surprises for same sign statements. The second row shows the marginal effect of monetary surprises for future-dominated statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the estimated transmission of MPS to asset prices for *future-dominated* statements. The classification of statements into future-dominated and non-future dominated is based on the target and path factors derived from Gürkaynak et al. (2005b). The R2 are computed from regressions for each subsample.

investors update their expectations about future short-term interest rates, they perceive monetary policy as neutral with respect to inflation (as inflation compensation remains unchanged). Changes in long-term real yields may reflect revisions in beliefs about the inflation target π^* rather than adjustments in the central bank's responsiveness to economic conditions (the "ϕ" parameters that capture the inflation and output gap fighting stance), which would induce a policy tightening/easing with respect to the neutral rate.[17] In this interpretation, we call inflation target the operational medium-run inflation objective in the spirit of the dynamic inflation target of Clayton and Schaab (2025), in contrast to the institutional inflation target set in the central bank mandate.

A side but noteworthy point from Table 11 is that the standard effects of monetary policy on real interest rates (Appendix Table A19 and in Nakamura and Steinsson, 2018) appear largely driven by the subsample of *future-dominated* statements. Our findings are consistent with the interpretation of the latter authors who suggest that policy announcements convey signals that affect investors' beliefs about the trajectory of the natural rate of interest.

[17] Considering the following standard Taylor rule: $i_t = r^* + \pi_t + \phi_\pi(\pi_t - \pi^*) + \phi_y(y_t - \bar{y}_t) + \epsilon_t$.

5 Future-dominated statements and the intermeeting period

Evidence suggests a fundamental role of future-dominated statements for the transmission of monetary policy to long-term rates, potentially through news about the central bank reaction function. Given the strong information content of the related monetary surprises, one testable hypothesis is that these future-dominated statements also affect subsequent market dynamics, and in particular the information acquisition process in the next intermeeting period. This section directly relates to the works of Cieslak, Morse, and Vissing-Jorgensen (2019) for stock returns and Cieslak and McMahon (2024) for the risk premium who analyze information dissemination and market dynamics during the intermeeting period.

5.1 The influence of future-dominated statements on market dynamics

We first examine how the information conveyed at a FOMC meeting m – whether the statement is *future-dominated* one – affects asset price dynamics during the *subsequent* intermeeting period. We estimate the following equation, defined at the intermeeting period level ($n = 188$):

$$Y_m = \alpha + \beta_1 \cdot \mathbb{1}_m^{Dom} + \beta_2 \cdot \mathbb{1}_m^{\text{MPU}} + \beta_3 \cdot \mathbf{X}_m + \epsilon_m \tag{11}$$

where Y_m is either *(i)* the volatility of policy expectations, measured as the standard deviation of daily changes in Eurodollar futures (ED1 to ED4) over the intermeeting period, defined from meeting m to meeting $m+1$, or *(ii)* the cumulative change in policy expectations, computed as the sum of the absolute changes in ED1 to ED4 over the same subsequent intermeeting period. $\mathbb{1}_m^{Dom}$ is a dummy variable indicating whether the statement published at the meeting m is a *future-dominated* one or not. $\mathbb{1}_m^{\text{MPU}}$ is a dummy variable for high monetary policy uncertainty (above its sample median), as measured by Bauer et al. (2022). $\mathbf{X}_m$ is a vector of control variables, including dummies for large path factors and forward guidance announcements at the meeting m.

We estimate a second specification on all business days ($n = 5,866$), where the dependent variable ΔY_t represents the absolute value of daily changes in the 5-year nominal interest rate and its decompositions into *(i)* forward rates vs. term premium, and *(ii)* real rates vs. inflation compensation. We examine the extent to which the magnitude of adjustments in long-term interest rates (and its components) varies in the intermeeting period after a future-dominated statement. Equation 12 is defined as:

$$\Delta Y_t = \alpha + \beta_1 \cdot \mathbb{1}_m^{Dom} + \beta_2 \cdot \mathbb{1}_m^{\text{MPU}} + \beta_3 \cdot \mathbf{X}_m + \epsilon_t \tag{12}$$

Table 12 presents estimates for both specifications. The first two columns of Table 12 show that the volatility of short-term policy expectations, one-quarter maturity Eurodollar futures, declines in the intermeeting period following a future-dominated statement. In quantitative terms, the average volatility of ED1 is 0.021 in intermeeting periods following *non-future-dominated* statements and low uncertainty, and this volatility is half lower for intermeeting periods following a future-dominated statement (0.09). For comparison, high monetary policy uncertainty strongly increases the volatility of policy expectations at both maturities.

Table 12: The impact of future-dominated statements in the subsequent intermeeting period

	IM frequency				**Daily frequency**				
	Volatility		**Cumul. change**		**Magnitude** (abs. value changes)				
	ED1	ED4	ED1	ED4	Nom 5y	Forw 5y	TP 5y	Real 5y	Inf 5y
$\mathbb{1}^{Dom}$	-0.012**	-0.005	-0.233***	-0.151*	-0.006***	-0.006***	-0.001	-0.003***	-0.003***
	[0.00]	[0.00]	[0.08]	[0.09]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
$\mathbb{1}^{MPU}$	0.035***	0.048***	0.560***	1.147***	0.019***	0.009***	0.004***	0.011***	0.014***
	[0.01]	[0.00]	[0.09]	[0.10]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Constant	0.021***	0.032***	0.380***	0.752***	0.035***	0.048***	0.019***	0.033***	0.023***
	[0.00]	[0.00]	[0.05]	[0.06]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
R^2	0.21	0.50	0.22	0.49	0.06	0.01	0.01	0.02	0.06
Obs.	187	187	187	187	5 866	5 866	5 866	5 855	5 855

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the impact of future-dominated statements and monetary policy uncertainty on asset price dynamics in the subsequent intermeeting period. The parameters are estimated from Equations 11 and 12 using OLS. In columns (1) and (2), the dependent variable is the standard deviation of ED1 and ED4 computed over the intermeeting period. In columns (3) and (4), the dependent variable is the sum of the absolute value of the daily changes in ED1 and ED4 over the intermeeting period. In columns 5 to 9, the dependent variables are the absolute value of daily changes in the 5-year nominal rates and its decomposition between the EH and term premium components, as well as real rates and inflation compensation. The right-hand side variables are a dummy that takes the value of 1 if the meeting that starts an intermeeting period has with a future-dominated statement (first row), and a dummy that takes the value of 1 if monetary policy uncertainty is above its sample median at the date of the starting meeting.

Estimates of the effect on the cumulative change in policy expectations conveys a similar message. Policy expectations exhibit significantly smaller movements following a future-dominated statement: Eurodollar futures move by around 15-23 bp less in cumulative terms in the intermeeting following a future-dominated statement. In other words, the average cumulative change in intermeeting periods following a future-dominated statement is 40% lower than in intermeeting periods with other statements and low uncertainty.

Estimates in Columns 5 to 9 of Table 12 suggest weaker adjustments in long-term rates after a future-dominated statement. The absolute changes in the 5-year nominal interest rate is 17% lower in the intermeeting period following a future-dominated statement than in other intermeeting periods, because of weaker adjustments in the EH component. Lower adjustments in 5-year nominal rates are equally driven by subdued adjustments in real rates and inflation compensation.

These results indicate that adjustments in policy expectations are smaller in the intermeeting period after a future-dominated statement. One hypothesis is that these more-informative statements reduce the processing of new information as well as information acquisition, which we will investigate in the next two subsections.

5.2 Future-dominated statements and the effects of speeches and data releases

Central bank communication between meetings, such as policymakers' speeches, has been shown to move asset prices (Ahrens, Erdemlioglu, McMahon, Neely, and Yang, 2024). Gilbert, Scotti, Strasser, and Vega (2017) also show that both the timeliness and relation to fundamentals influence the impact of data releases on asset prices. In this section, we test whether the information content of a statement influences the impact of data releases and policymakers' speeches on policy expectations over the subsequent intermeeting period.

We estimate the impact of speeches ($n = 806$ over our sample period) or economic data releases ($n = 3,595$) on the absolute value of daily changes in policy expectations (namely ED1 and ED4) after future-dominated and other statements, controlling for the role of monetary policy uncertainty, using the following Equation 13:

$$\Delta Y_t = \alpha + \beta_1 \cdot \mathbb{1}_m^{Dom} + \beta_2 \cdot \mathbb{1}_m^{\text{MPU}} + \beta_3 \cdot \mathbf{X}_m + \epsilon_t \tag{13}$$

Speeches are those given by members of the Board of Governors, taken from the Federal Reserve's website. We restrict our attention to speeches that are directly related to monetary policy or the state of the economy. These speeches are identified using textual analysis, and more precisely Latent Dirichlet Allocation (LDA). We refer the reader to the Appendix B.1 to B.4 for further details on the database of speeches and the topic modeling methodology. Data releases are taken from Bloomberg following the comprehensive set of Gilbert et al. (2017) that covers key economic indicators (*e.g.*, GDP, Non-Farm Payroll, Unemployment, CPI,...) and are described in further details in Appendix B.2. Because speeches and data releases can occur on the same day, we estimate Equation 13 on a sample with all events and another sample with unique events only.

Table 13: Daily impacts of speeches and data releases

	All events		Unique events	
	ED1	ED4	ED1	ED4
	Speeches			
$\mathbb{1}^{Dom}$	-0.003	-0.001	-0.002	0.000
	[0.00]	[0.00]	[0.00]	[0.01]
$\mathbb{1}^{MPU}$	0.016***	0.037***	0.011***	0.032***
	[0.00]	[0.00]	[0.00]	[0.01]
Constant	0.009***	0.024***	0.009***	0.020***
	[0.00]	[0.00]	[0.00]	[0.00]
R^2	0.05	0.14	0.06	0.10
Obs.	806	806	287	287
	Data releases			
$\mathbb{1}^{Dom}$	-0.007***	-0.004**	-0.007***	-0.004*
	[0.00]	[0.00]	[0.00]	[0.00]
$\mathbb{1}^{MPU}$	0.020***	0.040***	0.017***	0.038***
	[0.00]	[0.00]	[0.00]	[0.00]
Constant	0.012***	0.024***	0.013***	0.023***
	[0.00]	[0.00]	[0.00]	[0.00]
R^2	0.04	0.15	0.03	0.15
Obs.	3 595	3 595	2 637	2 637

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. Parameters are estimated from Equation 13 using OLS on days with speeches relevant to monetary policy (upper panel) and with data releases (lower panel). The dependent variable is the absolute value of daily changes in ED1 and ED4. In the first two columns, we consider all these days, ignoring the occurrence of multiple events on the same day. In the next two columns, we restrict our sample to days with a single event (speech or data release).

Estimates in Table 13 show that *future-dominated* statements lead to weaker impacts of data releases on policy expectations in the subsequent intermeeting period. This result is robust to excluding days when speeches and data releases coincide. It suggests that the information pro-

cessing may be altered following a future-dominated statement. One explanation is that a more-informative statement provides investors with sufficient insights into the Federal Reserve's policy intentions. As a result, investors form a tighter prior, reducing their sensitivity to new information from data releases. This could also lead to reduced information acquisition, since investors perceive less value in actively collecting new information. We explore this mechanism in the next section.

5.3 Future-dominated statements and information acquisition

Finally, we examine how future-dominated statements affect the transmission of changes in policy expectations driven by speeches and economic data releases to long-term interest rates during the intermeeting period. To do so, we estimate the following Equation 14:

$$\begin{aligned}\Delta Y_t = \alpha + \beta_1 \cdot \Delta ED4_{Speech_t} + \beta_2 \cdot \Delta ED4_{Speech_t} \cdot \mathbb{1}_m^{Dom} \\ + \beta_3 \cdot \Delta ED4_{Data_t} + \beta_4 \cdot \Delta ED4_{Data_t} \cdot \mathbb{1}_m^{\text{Dom}} + \beta_5 \cdot \mathbf{X}_m + \epsilon_t\end{aligned} \tag{14}$$

where $\Delta ED4_{Speech_t}$ is the daily change in four-quarter ahead Eurodollar futures when a speech occurs on date t and $\Delta ED4_{Data_t}$ when a data release occurs on date t. β_1 and β_3 capture the transmission of one-year policy expectations to 5-year interest rates when there is a speech and a data release respectively. β_2 and β_4 measures the marginal effect when these speeches and data releases happen in an intermeeting period after a *future-dominated* statement.

Table 14: The transmission of news in data and speeches to interest rates

	Nom 5y	Forw 5y	TP 5y	Real 5y	Inf 5y
ΔED4$_{Speech}$	0.370***	0.288***	0.102***	0.220***	0.151***
	[0.05]	[0.06]	[0.03]	[0.05]	[0.04]
ΔED4$_{Speech}$ x $\mathbb{1}^{Dom}$	-0.269**	-0.196	-0.087**	-0.122	-0.148**
	[0.11]	[0.12]	[0.04]	[0.08]	[0.07]
ΔED4$_{Data}$	0.676***	0.582***	0.135***	0.450***	0.226***
	[0.03]	[0.04]	[0.02]	[0.03]	[0.02]
ΔED4$_{Data}$ x $\mathbb{1}^{Dom}$	-0.109*	-0.143***	0.024	-0.108**	-0.001
	[0.06]	[0.06]	[0.03]	[0.05]	[0.04]
R^2	0.40	0.20	0.09	0.20	0.09
Obs.	5 866	5 866	5 866	5 855	5 855

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the effect of changes in policy expectations driven by a speech or a data release on 5-year nominal rates and their decomposition into (i) EH and term premium components, and (ii) real rates and inflation compensation. The first and third rows show the unconditional effect of changes in policy expectations, and the second and fourth rows the marginal effect after a future-dominated statement. Parameters are estimated from Equation 14 using OLS.

Results are presented in Table 14. The transmission to 5-year rates of changes in policy expectations induced by speeches and data releases is smaller after a future-dominated statement. Updates to policy expectations following speeches and data releases have less effect on long-term rates. This result operates through different channels. The reduced sensitivity of 5-year nominal yields to speech-induced changes in policy expectations appears to be mainly due to changes in the term premium and inflation compensation. In contrast, the reduced sensitivity to data-driven

changes in policy expectations operates through shifts in forward rates (reflecting expectations of future short-term rates) and real rates. This suggests that speeches and data releases are not processed the same way by investors. Overall, the weaker transmission of policy expectations to long-term rates is consistent with less information acquisition after future-dominated statements and is suggestive of a strong forward-looking information content of these statements.

6 Conclusion

This paper contributes to the understanding of monetary policy transmission by emphasizing the heterogeneous effects of monetary surprises on asset prices. We first establish that the shape of adjustments in policy expectations plays a key role in determining asset price reactions. Specifically, by classifying policy announcements through the lens of the interplay of target and path factors, we identify a subset of statements characterized by conflicting signals where forward-looking information dominates. These *future-dominated* statements, while constituting only a third of all meetings, disproportionately shape long-term interest rates. They drive most, if not all, of the effects of monetary policy and account for a large fraction of the variation in these rates. In contrast, statements with consistent signals – half of the meetings – affect short-term rates, stock prices and risk measures. These findings underscore that the transmission of monetary policy is not uniform: the identification of the effects of monetary policy depends on different subsets of statements according to the variable considered.

Our findings suggest that these future-dominated statements affect long-term rates by conveying information about the central bank reaction function, thereby reducing market volatility and information acquisition during the subsequent intermeeting period. Our results thus have critical implications for monetary policymaking strategies. Central banks should be cognizant of how different mixes of current and future policy signals are perceived by investors and how it affects the transmission of their decisions. Our analysis also highlights the importance of considering these dimensions into empirical analyses of the state-dependent effects of monetary policy and into macroeconomic modeling and policy evaluation frameworks.

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Appendix
For online publication

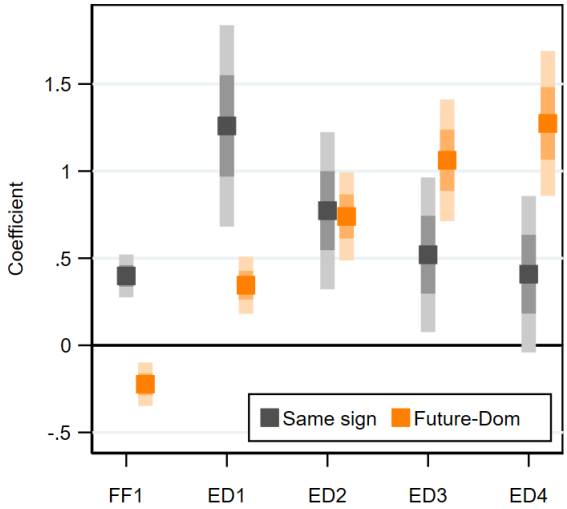
A Additional evidence

Table A1: Standard monetary policy effects in a 30-min window

	S&P500	2y	5y	10y	VIX
MPS_t	-6.020***	0.806***	0.723***	0.474***	0.259***
	[0.89]	[0.07]	[0.08]	[0.06]	[0.06]
R^2	0.29	0.64	0.46	0.30	0.11
Obs	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. Parameters are estimated from Equation 1 using OLS. They capture the effects of the high-frequency news-adjusted monetary surprises of Bauer and Swanson (2023a). The dependent variables are the 30-min change around the FOMC announcement in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4), and the VIX in column (5).

Figure A1: The life-cycle of policy expectations: same sign vs. future-dominated statements



Note: This figure represents the estimated coefficients of Equation 2 of the two different subsamples of FOMC statements: same sign vs. future-dominated statements. The right-hand side variable is the *news-adjusted* monetary surprises of Bauer and Swanson (2023a) while the the right-hand side variables are the policy expectations at different maturities (from current-month to one-year ahead).

Table A2: Monetary policy effects over subsamples

	S&P500	2y	5y	10y	VIX
			Pre 2009		
MPS_t	-9.955**	0.508**	0.363	0.190	12.998**
	[3.86]	[0.23]	[0.23]	[0.21]	[4.95]
MPS_t x $\mathbb{1}^{Dom}$	5.311	0.500**	0.559**	0.500**	-7.934
	[5.19]	[0.25]	[0.25]	[0.23]	[6.03]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-4.643	1.008***	0.922***	0.690***	5.064
	[3.47]	[0.10]	[0.11]	[0.10]	[3.45]
R^2	0.16	0.38	0.32	0.23	0.22
R^2 Other	0.08	0.20	0.13	0.05	0.09
R^2 Fut-Dom	0.07	0.65	0.64	0.54	0.10
Obs	77	77	77	77	77
			Post 2009		
MPS_t	-1.969	0.093	0.085	-0.273	1.094
	[6.14]	[0.40]	[0.35]	[0.23]	[7.39]
MPS_t x $\mathbb{1}^{Dom}$	-0.256	0.916**	0.990*	1.074**	0.967
	[8.42]	[0.45]	[0.52]	[0.45]	[9.91]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-2.225	1.008***	1.075***	0.801**	2.061
	[5.77]	[0.21]	[0.38]	[0.39]	[6.60]
R^2	0.06	0.19	0.12	0.10	0.14
R^2 Other	0.01	0.00	0.00	0.03	0.01
R^2 Fut-Dom	0.01	0.38	0.17	0.10	0.00
Obs	111	111	111	111	111

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS, over a sample ending in December 2008 (upper panel) and from January 2009 (bottom panel). Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b).

Table A3: Controlling for quantitative easing

	S&P500	2y	5y	10y	VIX
MPS_t	-6.403**	0.355*	0.204	-0.022	8.444*
	[3.01]	[0.21]	[0.20]	[0.15]	[4.31]
MPS_t x $\mathbb{1}^{Dom}$	4.368	0.600**	0.668***	0.648***	-6.121
	[4.70]	[0.23]	[0.25]	[0.23]	[5.52]
MPS_t x Unconv	-15.141	0.377	0.811	0.783	13.567
	[13.02]	[0.36]	[0.54]	[0.61]	[12.35]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-2.035	0.955***	0.872***	0.626***	2.323
	[3.43]	[0.10]	[0.15]	[0.15]	[3.56]
R^2	0.09	0.28	0.20	0.13	0.05
R^2 Other	0.05	0.10	0.05	0.00	0.04
R^2 Fut-Dom	0.03	0.51	0.30	0.20	0.04
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A4: Controlling for forward guidance

	S&P500	2y	5y	10y	VIX
MPS_t	-6.189**	0.342	0.203	-0.028	8.228*
	[2.93]	[0.21]	[0.19]	[0.14]	[4.40]
MPS_t x $\mathbb{1}^{Dom}$	6.929	0.547**	0.576**	0.546***	-8.775*
	[4.34]	[0.21]	[0.22]	[0.20]	[5.01]
MPS_t x FG	-16.129***	0.526***	0.828***	0.850***	13.930**
	[5.46]	[0.19]	[0.30]	[0.32]	[5.66]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	0.739	0.889***	0.779***	0.518***	-0.547
	[3.44]	[0.10]	[0.14]	[0.14]	[3.08]
R^2	0.15	0.28	0.20	0.14	0.08
R^2 Other	0.05	0.10	0.05	0.00	0.04
R^2 Fut-Dom	0.03	0.51	0.30	0.20	0.04
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A5: Controlling for central bank information effects

	S&P500	2y	5y	10y	VIX
$JK20_{MP}$	-10.973***	0.325*	0.262	0.071	12.628***
	[3.08]	[0.18]	[0.19]	[0.18]	[3.69]
$JK20_{MP}$ x $\mathbb{1}^{Dom}$	5.030	0.795***	0.960**	0.897**	-11.737*
	[4.40]	[0.23]	[0.38]	[0.43]	[6.28]
$JK20_{MP} \mid \mathbb{1}^{Dom} = 1$	-5.943*	1.120***	1.222***	0.968**	0.891
	[3.14]	[0.15]	[0.33]	[0.39]	[5.07]
R^2	0.14	0.32	0.25	0.17	0.07
R^2 Other	0.12	0.10	0.06	0.01	0.07
R^2 Fut-Dom	0.06	0.59	0.40	0.27	0.00
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A6: Controlling for press conferences

	S&P500	2y	5y	10y	VIX
MPS_t	-8.518**	0.481**	0.365*	0.152	10.366**
	[3.77]	[0.19]	[0.20]	[0.18]	[4.92]
MPS_t x $\mathbb{1}^{Dom}$	4.354	0.619***	0.695***	0.674***	-6.164
	[4.70]	[0.22]	[0.24]	[0.22]	[5.45]
MPS_t x PressConf	3.020	-0.387	-0.362	-0.423*	-3.093
	[5.72]	[0.30]	[0.30]	[0.23]	[8.27]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-4.163	1.100***	1.060***	0.826***	4.202
	[3.33]	[0.13]	[0.16]	[0.16]	[3.84]
R^2	0.07	0.28	0.18	0.11	0.05
R^2 Other	0.04	0.11	0.06	0.01	0.03
R^2 Fut-Dom	0.03	0.49	0.26	0.16	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A7: Controlling for *Summary of Economic Projections* (SEP)

	S&P500	2y	5y	10y	VIX
MPS_t	-9.354**	0.464**	0.368*	0.134	12.612***
	[4.11]	[0.21]	[0.20]	[0.18]	[4.81]
MPS_t x $\mathbb{1}^{Dom}$	3.614	0.646***	0.704***	0.656***	-3.944
	[4.58]	[0.22]	[0.25]	[0.23]	[5.15]
MPS_t x SEP	5.834	-0.273	-0.316	-0.288	-11.406**
	[4.43]	[0.25]	[0.29]	[0.24]	[5.67]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-5.740*	1.110***	1.072***	0.790***	8.668***
	[3.26]	[0.14]	[0.18]	[0.17]	[3.07]
R^2	0.08	0.28	0.17	0.11	0.07
R^2 Other	0.05	0.10	0.05	0.00	0.04
R^2 Fut-Dom	0.03	0.51	0.30	0.20	0.04
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A8: Controlling for monetary policy uncertainty

	S&P500	2y	5y	10y	VIX
MPS_t	-18.015**	1.373***	1.265***	0.560*	24.646*
	[7.41]	[0.33]	[0.34]	[0.32]	[12.89]
MPS_t x $\mathbb{1}^{Dom}$	3.702	0.663***	0.728***	0.678***	-4.887
	[4.86]	[0.22]	[0.23]	[0.22]	[5.82]
MPS_t x MPU	10.543	-1.009***	-1.007***	-0.515	-15.604
	[7.80]	[0.39]	[0.38]	[0.32]	[12.83]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-14.313**	2.036***	1.993***	1.237***	19.759
	[7.21]	[0.42]	[0.43]	[0.36]	[13.45]
R^2	0.09	0.33	0.21	0.11	0.08
R^2 Other	0.09	0.13	0.07	0.01	0.09
R^2 Fut-Dom	0.03	0.49	0.26	0.16	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A9: Controlling for financial market volatility (VIX)

	S&P500	2y	5y	10y	VIX
MPS_t	1.113	0.577**	-0.004	-0.639*	-6.101
	[6.98]	[0.27]	[0.34]	[0.34]	[7.52]
MPS_t x $\mathbb{1}^{Dom}$	2.652	0.580**	0.745***	0.801***	-3.295
	[4.85]	[0.22]	[0.27]	[0.25]	[5.83]
MPS_t x VIX	-0.366	-0.007	0.012	0.028**	0.643***
	[0.30]	[0.01]	[0.01]	[0.01]	[0.23]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	3.765	1.158***	0.740***	0.162	-9.396*
	[5.80]	[0.17]	[0.22]	[0.21]	[5.51]
R^2	0.09	0.30	0.20	0.16	0.06
R^2 Other	0.09	0.13	0.07	0.01	0.09
R^2 Fut-Dom	0.03	0.49	0.26	0.16	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A10: Controlling for interest rate skewness

	S&P500	2y	5y	10y	VIX
MPS_t	-8.036**	0.375*	0.260	0.029	9.772**
	[3.46]	[0.20]	[0.18]	[0.15]	[3.82]
MPS_t x $\mathbb{1}^{Dom}$	3.231	0.586**	0.597**	0.555**	-3.029
	[5.46]	[0.26]	[0.29]	[0.27]	[5.66]
MPS_t x ISK	6.959	0.118	0.445	0.565	-17.464
	[7.88]	[0.57]	[0.55]	[0.42]	[10.95]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-4.805	0.960***	0.856***	0.584***	6.743*
	[3.65]	[0.16]	[0.21]	[0.19]	[4.05]
R^2	0.08	0.29	0.19	0.14	0.06
R^2 Other	0.09	0.13	0.07	0.01	0.09
R^2 Fut-Dom	0.03	0.49	0.26	0.16	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A11: Controlling for large path factors

	S&P500	2y	5y	10y	VIX
MPS_t	-6.694**	0.366	0.207	-0.059	9.318*
	[3.38]	[0.23]	[0.21]	[0.17]	[5.54]
MPS_t x $\mathbb{1}^{Dom}$	5.942	0.593**	0.629**	0.582**	-6.634
	[5.49]	[0.26]	[0.28]	[0.25]	[6.13]
MPS_t x Large Path	-3.096	0.049	0.160	0.243	0.820
	[5.41]	[0.29]	[0.28]	[0.23]	[7.09]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-0.752	0.959***	0.836***	0.523**	2.684
	[4.98]	[0.26]	[0.27]	[0.23]	[6.58]
R^2	0.07	0.27	0.17	0.11	0.04
R^2 Other	0.04	0.10	0.05	0.01	0.03
R^2 Fut-Dom	0.04	0.50	0.26	0.16	0.01
Obs	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The third row shows the marginal effect for large path (when the path factor in absolute value is above its 75th percentile). The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A12: The effect of the overall monetary surprises of GSS2005

	S&	2y	5y	10y	VIX
GSS05	-3.427	0.254***	0.199**	0.082	3.636
	[2.10]	[0.07]	[0.08]	[0.08]	[2.23]
GSS05 x $\mathbb{1}^{Dom}$	2.124	0.173**	0.207*	0.215*	-1.535
	[2.57]	[0.08]	[0.11]	[0.11]	[2.73]
GSS05 $\mid \mathbb{1}^{Dom} = 1$	-1.303	0.428***	0.407***	0.297***	2.101
	[1.49]	[0.04]	[0.07]	[0.07]	[1.57]
R^2	0.06	0.32	0.20	0.11	0.04
R^2 Other	0.05	0.14	0.08	0.02	0.02
R^2 Fut-Dom	0.02	0.56	0.29	0.17	0.02
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the overall monetary surprises of Gürkaynak et al. (2005b). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A13: The effect of the pure monetary shock series of JK2020

	S&P500	2y	5y	10y	VIX
JK20	-6.936**	0.438***	0.320**	0.120	7.710**
	[3.26]	[0.12]	[0.14]	[0.15]	[3.85]
JK20 x $\mathbb{1}^{Dom}$	3.641	0.704***	0.802***	0.722***	-3.238
	[5.07]	[0.17]	[0.25]	[0.27]	[5.74]
JK20 $\mid \mathbb{1}^{Dom} = 1$	-3.295	1.142***	1.122***	0.842***	4.472
	[3.88]	[0.12]	[0.21]	[0.23]	[4.25]
R^2	0.07	0.34	0.21	0.12	0.05
R^2 Other	0.06	0.16	0.08	0.01	0.03
R^2 Fut-Dom	0.02	0.58	0.32	0.20	0.01
Obs.	188	188	188	188	188

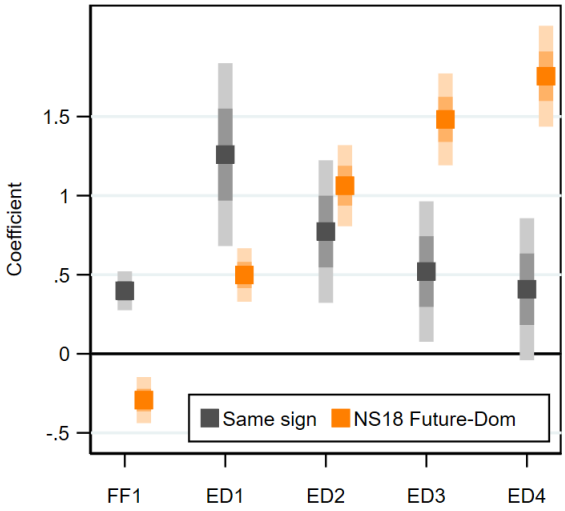
Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the pure monetary policy shock series of Jarociński and Karadi (2020). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A14: The effect of the unadjusted series of BS2023

	S&P500	2y	5y	10y	VIX
MPS_t	-7.031**	0.396***	0.305**	0.124	7.789**
	[3.41]	[0.14]	[0.15]	[0.16]	[3.75]
MPS_t x $\mathbb{1}^{Dom}$	4.170	0.596***	0.649***	0.586**	-4.190
	[4.82]	[0.18]	[0.24]	[0.26]	[5.10]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	-2.861	0.993***	0.954***	0.710***	3.599
	[3.41]	[0.11]	[0.19]	[0.20]	[3.46]
R^2	0.07	0.32	0.20	0.12	0.04
R^2 Other	0.06	0.13	0.07	0.01	0.03
R^2 Fut-Dom	0.02	0.58	0.31	0.19	0.01
Obs.	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the unadjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b). The associated R2 are derived from regressions estimated on each selected sub-sample.

Figure A2: The life-cycle of policy expectations:
same sign vs. future-dominated statements with NS2018 classification



Note: This figure represents the estimated coefficients of Equation 2 of the two different subsamples of FOMC statements: same sign vs. future-dominated statements. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the FFR and News shock series of Nakamura and Steinsson (2018). The right-hand side variable is the *news-adjusted* monetary surprises of Bauer and Swanson (2023a) while the the right-hand side variables are the policy expectations at different maturities (from current-month to one-year ahead).

Table A15: Monetary surprises and statement classification from NS2018

	S&P500	2y	5y	10y	VIX
NS18	-9.581**	0.913***	0.738***	0.408**	11.088**
	[4.38]	[0.19]	[0.20]	[0.19]	[5.23]
NS18 x $\mathbb{1}^{Dom}$	19.212	1.133***	1.140***	0.914***	-17.867
	[12.37]	[0.29]	[0.34]	[0.31]	[11.83]
NS18 $\mid \mathbb{1}^{Dom} = 1$	9.631	2.046***	1.877***	1.322***	-6.780
	[11.57]	[0.22]	[0.28]	[0.25]	[10.61]
R^2	0.06	0.28	0.14	0.06	0.03
R^2 Other	0.06	0.20	0.09	0.03	0.03
R^2 Fut-Dom	0.06	0.69	0.59	0.48	0.03
Obs.	188	188	188	188	188
Obs. Fut-Dom	24	24	24	24	24

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the News shock series of Nakamura and Steinsson (2018). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is based on the sign and magnitude of the FFR and News shock series of Nakamura and Steinsson (2018). The associated R2 are derived from regressions estimated on each selected sub-sample.

Table A16: Combined classifications from GSS2005 and NS2018

	S&P500	2y	5y	10y	VIX
MPS_t	-7.364***	0.560***	0.490***	0.267**	8.684***
	[2.58]	[0.15]	[0.15]	[0.13]	[3.17]
MPS_t x $\mathbb{1}^{Dom}$	10.606	0.556***	0.536***	0.461**	-11.529*
	[6.71]	[0.18]	[0.20]	[0.19]	[6.03]
$MPS_t \mid \mathbb{1}^{Dom} = 1$	3.243	1.116***	1.026***	0.728***	-2.845
	[6.19]	[0.10]	[0.14]	[0.14]	[5.12]
R^2	0.07	0.25	0.14	0.06	0.04
R^2 Other	0.05	0.17	0.09	0.03	0.03
R^2 Fut-Dom	0.02	0.70	0.63	0.51	0.02
Obs.	188	188	188	188	188
Obs. Fut-Dom	19	19	19	19	19

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 9 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the S&P500 in column (1), the 2-year, 5-year and 10-year nominal yields in columns (2), (3) and (4) and the VIX in column (5). The first row shows the estimated effects of monetary surprises for *same sign* FOMC statements. The second row shows the marginal effect for *future-dominated* statements. The last row ($MPS_t \mid \mathbb{1}^{\text{Dom}} = 1$) shows the average effects of monetary surprises in this latter case. The classification of meetings into *future-dominated* and non-*future-dominated* statements is the combined subset of statements based on the sign and magnitude of the Target and Path surprises derived from Gürkaynak et al. (2005b) and of the FFR and News shock series of Nakamura and Steinsson (2018). The associated R2 are derived from regressions estimated on each selected sub-sample.

Probit model for Table A17:

$$\begin{aligned}\Pr(\mathbb{1}_t^{Dom} = 1) = \Phi\,(&\beta_0 + \beta_1 \cdot \text{QE} + \beta_2 \cdot \text{FG} + \beta_3 \cdot \text{SEP} + \beta_4 \cdot \text{Press Conf} \\ &+ \beta_5 \cdot \text{Turning Point} + \beta_6 \cdot \text{Status Quo} + \beta_7 \cdot \text{MPU} \\ &+ \beta_8 \cdot \text{ISK} + \beta_9 \cdot \text{VIX}) + \epsilon_t\end{aligned} \tag{15}$$

Table A17: Probit model for future-dominated statements

	Probability that $\mathbb{1}_t^{Dom} = 1$										
QE	0.092									0.087	
	[0.12]									[0.14]	
FG		0.232**								0.258**	0.279***
		[0.11]								[0.11]	[0.10]
SEP			-0.002							-0.017	
			[0.08]							[0.10]	
Press conf				-0.026						0.085	
				[0.07]						[0.11]	
Turning					-0.297***					-0.193*	-0.186*
					[0.09]					[0.11]	[0.11]
Status quo						0.140*				0.186**	0.186**
						[0.07]				[0.08]	[0.08]
MPU							0.128*			0.296***	0.254***
							[0.07]			[0.09]	[0.07]
ISK								0.064		0.002	
								[0.07]		[0.07]	
VIX									-0.003	-0.008**	-0.007*
									[0.00]	[0.00]	[0.00]
R^2	0.00	0.03	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.12	0.11
Obs.	188	188	188	188	188	188	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the results of the probit estimation of regression 15. The dependent variable is the probability that a statement is identified as a *future-dominated* statement using the target and the path factors derived from Gürkaynak et al. (2005b). The independent variables are, in turn: a dummy that takes the value of 1 if the FOMC meeting decides on a change in quantitative easing (QE) policy; a dummy that takes the value of 1 if the FOMC meeting decides on a change in forward guidance (FG) policy; a dummy that takes the value of 1 if the FOMC meeting is accompanied by a Summary of Economic Projections (SEP); a dummy that takes the value of 1 if the FOMC meeting is followed by a press conference (Press conf.); a dummy that takes the value of 1 if the FOMC meeting is a turning point, *i.e.* decides the last or first hike/cut before pauses; a dummy that takes the value of 1 if the FOMC meeting is decide a status quo; an indicator of monetary policy uncertainty (MPU); an indicator reflecting macro uncertainty (ISK); and finally an index of the market volatility (VIX). The first nine columns show the effect of each variable separately. In the column (10), the effects of these covariates are estimated simultaneously. Finally, in the last column, only the relevant covariates are estimated simultaneously.

Table A18: Decomposition of nominal interest rates

	Nominal interest rates			Expectation hypothesis			Term premium		
	2y	5y	10y	2y	5y	10y	2y	5y	10y
MPS_t	0.645***	0.552***	0.308***	0.735***	0.256*	-0.044	-0.120**	0.314***	0.344***
	[0.12]	[0.12]	[0.11]	[0.15]	[0.14]	[0.11]	[0.06]	[0.08]	[0.07]
R^2	0.22	0.12	0.04	0.15	0.02	0.00	0.02	0.12	0.12
Obs.	188	188	188	188	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 1 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the 2-year, 5-year and 10-year nominal yields in columns (1), (2) and (3) and their respective EH component in columns (4), (5) and (6), and term premium component in columns (7), (8), and (9).

Table A19: Decomposition of nominal interest rates

	Nominal interest rates			Real rates			Inflation comp.		
	2y	5y	10y	2y	5y	10y	2y	5y	10y
MPS_t	0.645***	0.552***	0.308***	0.263	0.571***	0.401***	0.382	-0.019	-0.093
	[0.12]	[0.12]	[0.11]	[0.42]	[0.15]	[0.11]	[0.40]	[0.11]	[0.08]
R^2	0.22	0.12	0.04	0.01	0.09	0.07	0.01	0.00	0.02
Obs.	188	188	188	188	188	188	188	188	188

Note: Huber-White heteroskedasticity-robust standard errors in brackets. * p < 0.10, ** p < 0.05, *** p < 0.01. This table shows the estimated effects of the news-adjusted monetary surprises of Bauer and Swanson (2023a). Equation 1 is estimated using OLS. Only the main estimated parameters are reported. The dependent variables are the daily change in the the 2-year, 5-year and 10-year nominal yields in columns (1), (2) and (3), and their respective real rate component in columns (4), (5) and (6), and inflation compensation in columns (7), (8), and (9).

B Events database

B.1 Speeches

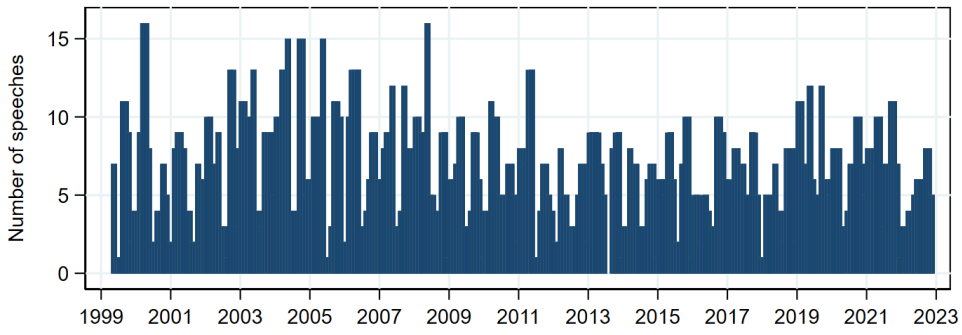
The FOMC members' speeches are obtained from the Federal Reserve website, covering speeches from the Board members between 1996-2020 and the ECB speech database, covering the Executive Board members speeches only as well. For the ECB, we keep only the speeches in English, as only a few speeches in a database are not enough to pursue a language-specific topic analysis, and letting different langugages in the database impact the topic distribution.

We move the date of a speech that is happening on a weekend or holiday to the next business day. Note that several speeches can happen the same day. The topic analysis collapses the topics share by date. In order to have metadata by date as well, we concatenate the different speakers, text and location when there are several speeches.

Timing of the speeches. There are only 3 speeches of Board members for the Fed, happening the same day of a given FOMC statement: 13/12/2017 (Brainard at 6pm), 29/09/1998 (Ferguson at 3:15pm) and 11 March 2008 (Krozner at 10:00 am. There was a conference call on the 10th and the press release is on the 11th, with an announcement was at 8:30 am. See FOMC Conference Call Transcript, March 10, 2008). On all these occasions, the speeches did not happen at the same time as the statement is released at 2:15 pm.

Speeches are made available on the media the same day as their occurrence. Merging with the Factiva database, we do see that they are published the same day (for example: 11/16/2009 published at 11:33 pm, 12/07/2009 at 05:34 pm and 22/08/2008 at 11:29 pm (Jackson Hole speech).

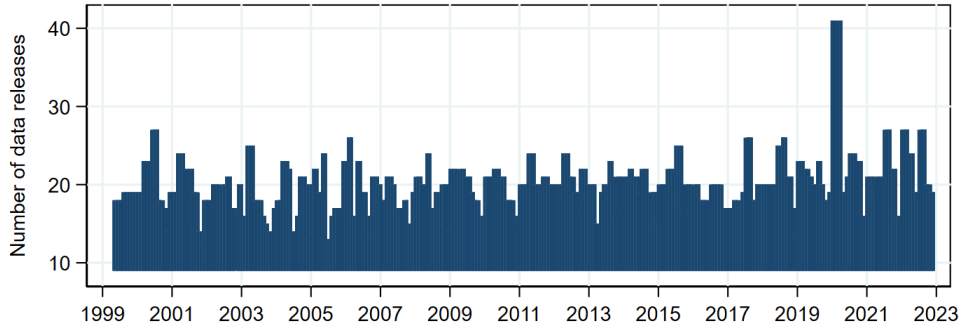
Figure A3: Number of speeches in each intermeeting



B.2 Data releases

We use a comprehensive set of important 27 key economic data releases, based on Gilbert et al. (2017): *GDP, PMI, Factory orders, Industrial production, ISM manufacturing, Construction Spending, Business inventories, Durable goods orders, Philadelphia Fed Business outlet, Leading index, capacity utilization, CPI, CPI excl. food and energy, PPI, PPI Excl. food and energy, GDP price deflator, Non-farm payroll, Unemployment rate, personal income, consumer credit, Trade balance, housing starts, New home sales, Conf. Board consumer confidence, University of Michigan Sentiment index*. We get the release from Bloomberg. Figure A4 shows the time series of our data releases.

Figure A4: Number of data releases in each intermeeting



B.3 Descriptive statistics

Table A20: Descriptive statistics

	Total	Share	Avg Nb/IM	Max/IM	All events		Unique events	
					Avg. effect	IM adj. share	Avg. effect	IM adj. share
Statements	188	3.2	1	1	0.063	5.5	0.063	6.6
Unscheduled	10	0.2	0.07	2	0.161	0.3	0.180	0.2
Speeches	1207	20.5	6.6	16	0.035	19.7	0.031	7.9
Data releases	2747	46.6	15.0	36	0.036	49.2	0.036	55.6
Minutes	54	0.9	0.3	1	0.029	0.9	0.029	1.1
Residual	1689	28.7	9.1	17	0.030	24.3	0.030	28.7

Figure A5: Contribution of each event in cumulated absolute changes in ED4, per IM

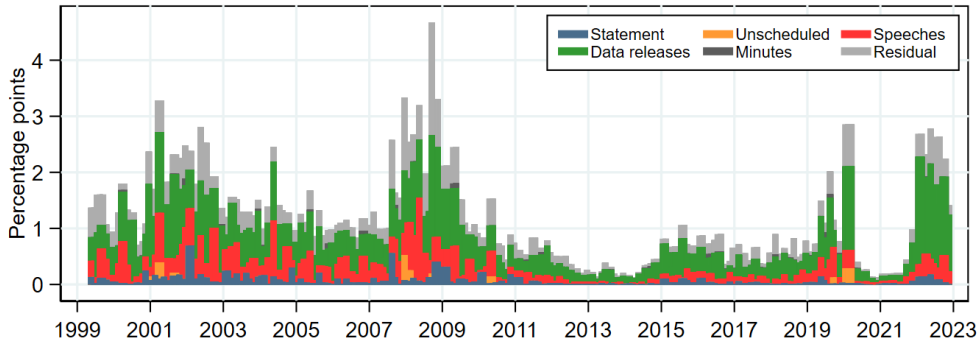


Figure A6: Share of each event in cumulated absolute changes in ED4, per IM

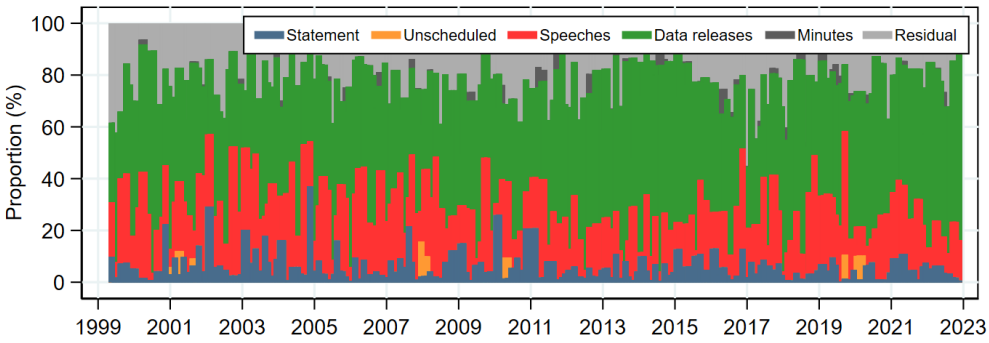


Figure A7: Share of data releases in ED4 cumulated adjustment in each IM

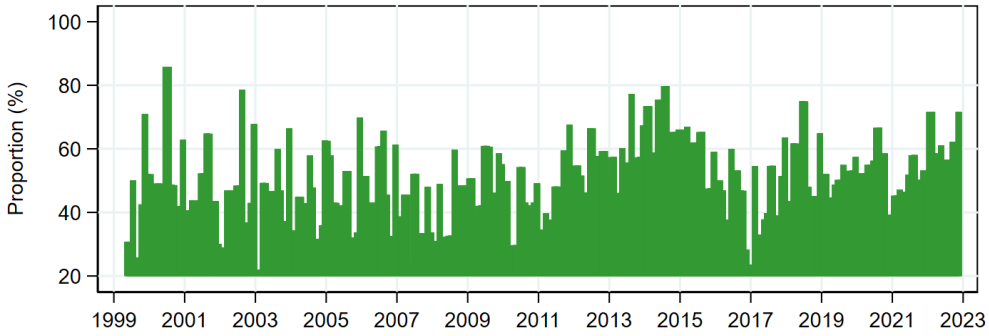
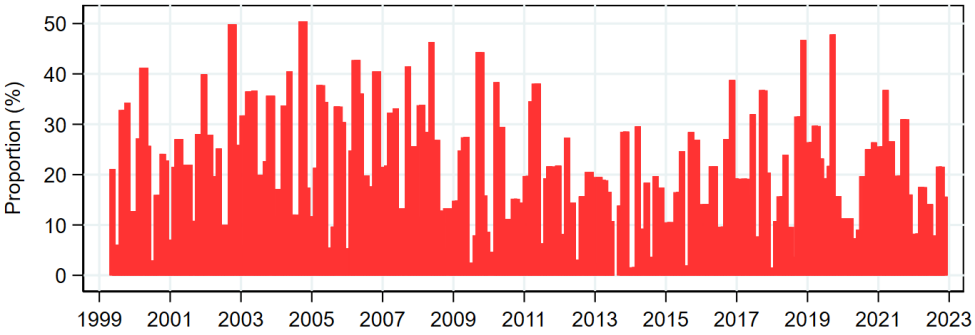


Figure A8: Share of speeches in ED4 cumulated adjustment in each IM



B.4 Measuring the content of speeches

We describe here the textual analysis on our corpus composed of both speeches and statements in order to identify speeches on monetary policy and state of the eocnomy. Before attributing a distribution of topic for each speech, we need to prepare the corpus. This involves:

- Pre-processing: removing stopwords, punctuations
- Stemming tokens to a common root (e.g., inflationary and inflation)

We then apply the LDA, a probabilistic model which outputs a distribution of topics over our texts, each topic associated with a distribution of words. Each document d of the D documents (speeches and statements) is described as a probabilistic mixture of $T = 8$ topics (fixed by the researcher).

$$* \begin{pmatrix} \theta_1 \\ . \\ . \\ . \\ \theta_D \end{pmatrix} = \begin{pmatrix} p(t_1|d_1) & ... & p(t_T|d_1) \\ . & . & . \\ . & . & . \\ p(t_1|d_D) & ... & p(t_T|d_D) \end{pmatrix} \tag{16}$$

* Each topic $t \in T$ itself is a probability distribution over a vocabulary (set of words in a document) of size V:

$$* \begin{pmatrix} \phi_1 & ... & \phi_T \end{pmatrix} = \begin{pmatrix} p(w_1|t_1) & ... & p(w_1|t_T) \\ . & & \\ . & & \\ p(w_v|t_1) & ... & p(w_v|t_T) \end{pmatrix} \tag{17}$$

Table A21 summarizes the 8 clusters obtained.

Table A21: The eight topics from the LDA analysis of FOMC and ECB text data

Payment systems



Monetary policy (Fed)



Economy



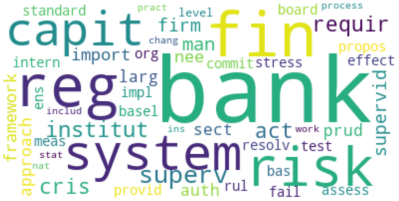
Fed credit



Euro area



Banking



Financial risk



Monetary policy (ECB)



We use the probability distribution of the “Monetary policy (Fed)" and “Economy" topics to isolate the speeches that discuss monetary policy issues and the state of the economy. We use the median probability for each of these topics to define a threshold above which we consider a speech to be relevant.