The Pre-FOMC Drift and the Secular Decline in Long-Term Interest Rates

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Abstract

We document positive and significant returns on long-term U.S. Treasury (UST) bonds on the day before the FOMC announcements and attribute this pre-FOMC drift to the premium for heightened uncertainty. Unlike the pre-FOMC drift in U.S. equity, which is realized mostly on the day of the FOMC announcement, the pre-FOMC drift in UST occurs earlier. On the day before the FOMC, the 10-year UST yield drops by a significant 0.79 bps and contributes importantly to the secular decline in interest rates documented by Hillenbrand (2025). Unique to the day before the FOMC is a severe disconnect between the long- and short-term yields – an indication that the pre-FOMC pricing of long-term bonds is dominated by the risk-premium channel, not the monetary-policy decision on the target rate. Consistently, the pre-FOMC drift in UST yield is driven entirely by the term premium component. We further capture the pre-FOMC heightened uncertainty using the ex-ante Macro Attention Index (MAI) of Fisher et al. (2022). Conditioning on above-median MAI on unemployment rates, the pre-FOMC reduction in 10-year UST yield increase significantly to 1.91 bps and is predictive of the subsequent pre-FOMC drift in equity.

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1 Introduction

This paper studies the pricing of long-term U.S. Treasury bonds in anticipation of the announcements of the Federal Open Market Committee (FOMC). Instead of focusing on the ex-post market reaction to the FOMC announcements (Kuttner (2001), Gurkaynak et al. (2005), Nakamura and Steinsson (2018)), we examine the ex-ante market pricing prior to the announcements. Our paper is motivated by two recent studies at the intersection of the Fed and the financial markets. The first paper is that of Lucca and Moench (2015), who document a strong pre-FOMC drift in the equity market over a 24-hour window before the FOMC announcements. Interestingly, they do not find a significant pre-FOMC drift in U.S. Treasury bonds, the market with the closest connection with monetary policy. The second and more recent paper by Hillenbrand (2025), however, affirms the connection between the Treasury market and the Fed via the striking finding that a three-day window around the FOMC announcements captures the secular decline in long-term U.S. Treasury yields.

Connecting these two emerging strands of literature, we make two important empirical observations. First, contrary to the conclusion of Lucca and Moench (2015), we find positive and significant returns (i.e., negative yield changes) on long-term Treasury bonds before the FOMC announcement, as shown in the upper panel of Figure 1. Our approach differs from that of Lucca and Moench (2015) in that, instead of examining the 24-hour window before the FOMC announcements, we focus our attention on the day before the FOMC, which is also the first day of the two-day FOMC meeting. Over the 24-hour window that ends at the market close of the day before the FOMC announcement, the 10-year zero-coupon bond yield drops by a significant 0.79 basis points, compared with a full-sample average of -0.04 basis points. Moreover, this significant pre-FOMC reduction in yield is unique and robust only for long-term bonds – over the same pre-FOMC window, the 2-year bond yield drops by an insignificant 0.24 basis points while the 3-month-ahead Fed fund futures rate increases by 0.33 basis points.

Moreover, the pre-FOMC drift in long-term Treasuries co-moves closely with the well-known drift in the equity market. The lower panel of Figure 1 plots the cumulative pre-FOMC drift in both long-term bond and equity markets, revealing a striking similarity. The persistent comovement is difficult to reconcile with a pure information channel: if markets were only reacting to monetary policy news without bearing risk, there would be no systematic upward accumulation in either drifts. Instead, the parallel and upward accumulation of pre-FOMC returns prior to announcements points to a common risk-premium channel where investors require compensation for bearing policy-related uncertainty that is resolved before the FOMC release. However, the specific drivers differ – pre-FOMC SPX driven by equity market uncertainty (e.g., VIX), while pre-FOMC UST by macro uncertainty (e.g., UMAI)

and the post-2008 QE.

Second, the pre-FOMC drift contributes to a steady decline in long-term interest rates. From June 1989 through December 2025, the cumulative effect of the pre-FOMC reduction in yield amounts to -3.10%, the largest one-day contributor to the secular decline in interest rates documented by Hillenbrand (2025) using a three-day window that includes the days before, of, and after all the scheduled and unscheduled FOMC announcement. While Hillenbrand (2025) attributes the forward guidance provided by the Fed's announcements as the most important driver of the long-run path of interest rates, our pre-FOMC drift, realized prior to the FOMC announcements, indicates the presence of a second channel that is important in explaining the secular decline of long-term yields.

Risk and Return in Long-Term Bonds – The pre-FOMC drift offers a unique and concentrated window into the risk and return in long-term bonds, which are closely linked to macro and policy uncertainties. As indication that the pre-FOMC drift in long-term yield is dominated by the risk-premium channel, not the monetary-policy decision on the target rate, we document a reduced comovement between the long- and short-term yields that is unique only on the day before the FOMC announcement, when the pre-FOMC drift is realized.[1] Focusing further on the risk premium component, we use the 10-year term premium constructed by Adrian et al. (2013), which is the difference between the 10-year yield and the expectation of future short rates. We find that the pre-FOMC reduction in yield can be attributed almost entirely to the term premium component.[2]

To shed further light on the risk-premium channel, we build our hypothesis on the two-risk model of Hu et al. (2022), which attributes the pre-announcement drift to the resolution of heightened uncertainty prior to the announcement. Central to the model is the incorporation of an impact uncertainty, which controls the market impact of the announcement shock. To the extent that market participants are highly uncertain about an impending announcement, it is reflected in the model via a volatile impact uncertainty, which in turn drives up the premium for impact uncertainty. Upon the resolution of the heightened uncertainty prior to the announcement, the risk premium for impact uncertainty is also realized, giving rise to the pre-announcement drift.

Heightened Uncertainties and Subsequent Resolution – Central to Hu et al. (2022) is the

[1]Specifically, the importance of the slope factor, which captures the difference between the long- and short-term yields, jumps from a normal level of 14% to 37% and then quickly reverts back to the normal level, while the level factor, which captures the overall level of the yield curve, jumps downward from a normal level of 79% to 50%. In other words, on the day before the FOMC, when the pre-FOMC drift in long-term bond is realized, the driver of the long-term bond pricing is disconnected from the short-rate dynamics.

[2]On the day before the FOMC announcement, the average reduction in the 10-year zero coupon yield is 0.79 basis points with a t-stat of 2.40, while that of the 10-year term premium is 0.71 basis points with a t-stat of 2.35.

accumulation of heightened uncertainty and its subsequent resolution prior to the announcement. By examining option-implied measures of market uncertainty, VIX for equities and MOVE for Treasuries, we uncover that the accumulation of uncertainty and its subsequent resolution happen earlier in bond market than in equity market. The Treasury-market uncertainty component, captured by the portion of MOVE orthogonal to VIX, rises earlier from day -5 to day -4 and decreases from day -2 to day -1. By contrast, the VIX index only decreases from day -1 to day 0 and and a substantial portion of this reduction occurs before the announcement. Crucially, the timing of uncertainty resolution aligns tightly with the timing of positive returns. We document a strong positive relationship between orthogonalized MOVE change and term premium change on day -1: larger reductions in Treasury-market uncertainty are associated with more pronounced declines in the term premium. It's also true in stock market that a reduction in VIX before the announcement is associated with higher pre-FOMC stock return. Together, these results indicate that in both U.S. Treasury and equity market, greater resolution of market-specific uncertainty prior to the FOMC announcement is associated with larger pre-FOMC drift.

The two-risk model by Hu et al. (2022), however, is silent on exactly what kind of uncertainty is resolved. Taking advantage of the fact that the risk involved in bond pricing is substantially less complex than that in equity pricing, we directly investigate the macroeconomic drivers of the pre-FOMC drift in bond markets. In particular, we examine whether the pre-FOMC drift in bond market is systematically linked to fundamentals that govern the Fed's policy stance. Consistent with the Federal Reserve's dual mandate, we find that the magnitude of the pre-FOMC drift in long-term bonds is positively related to the monthly unemployment rate, a key indicator shaping expectations of policy accommodation. This evidence ties the pre-FOMC drift to labor-market condition, providing new insight into the specific nature of uncertainty being resolved.

To find high-frequency evidence, we use the daily macro attention index (MAI) developed by Fisher et al. (2022). A news-based measure, the MAI indices capture the newspapers' attention on a range of macroeconomic risks, including monetary MAI on monetary policy and unemployment MAI on labor market conditions. Compared with the uncertainty measures extracted from capital markets (e.g., the option-implied VIX and MOVE indices), the MAI indices, with their dedicated focus on the respective macroeconomic fundamentals, offers a more precise link to the source of uncertainty. For example, an increase in the unemployment MAI indicates heightened uncertainty with respect to the labor market. As documented by Fisher et al. (2022), the unemployment MAI intensifies in response to higher unemployment rates and increases more when it is associated with bad news. Indeed, we find that, three days before the FOMC announcement, the correlation between the unemployment MAI and the contemporaneous unemployment rate intensifies, suggesting a heightened sensitivity to

labor market conditions in anticipation of the FOMC announcements.[3]

Focusing on unemployment MAI and monetary MAI, two uncertainty measures that are highly related to monetary policy, we examine their respective impact on the pre-FOMC drift in long-term bonds. Using the unemployment MAI three days before the FOMC announcement as a conditioning variable, we find that the pre-FOMC reduction in 10-year zero-coupon yield strengthens to a significant 1.91 basis points when the uncertainty with respect to the labor market condition is above median. By contrast, when the uncertainty is below median, the pre-FOMC change in 10-year yield is no longer significant and is in fact slightly positive with -0.01 basis points. These results indicate that the pre-FOMC drift is significant only under heightened uncertainty over the labor market condition, confirming the mechanism of premium for heightened uncertainty. Moreover, our approach also allows us to identify the nature of the uncertainty. Contrary to unemployment MAI, the uncertainty proxied by the monetary MAI does not have any impact on the pre-FOMC bond pricing, indicating that while uncertainty naturally increases in anticipation of the FOMC announcements, it is the heightened uncertainty with respect to the macro fundamentals such as the unemployment rate that drives the risk premium in long-term bonds.

To further capture the accumulation of heightened uncertainty, an important component in the model of Hu et al. (2022), we also trace the change of unemployment MAI from day -5 to -3 relative the the FOMC announcement. We find that higher the increase in uncertainty, stronger the pre-FOMC drift in long-term yields – a one standard deviation increase in changes in MAI is associated with an extra pre-FOMC reduction of 0.77 basis points in 10-year yield and 1.11 basis points in the term premium component of the 10-year yield. Overall, consistent with the prediction of the two-risk model of Hu et al. (2022), increased macro uncertainties, as captured by both the level of the unemployment MAI and its change, are predictive of the pre-FOMC reduction in long-term yield.

Pre-FOMC Drift in Bond and Equity – While the premium for heightened uncertainty drives the pre-FOMC drift in both bond and equity, the exact content of uncertainty differs. For the equity market, the heightened uncertainty is best captured by the VIX index (Lucca and Moench, 2015). Regressing the pre-FOMC drift in the S&P 500 index on lagged VIX, the R-squared of this predictive regression is 14.5%, which is huge for a predictive regression of equity returns at this high frequency.[4] Similar to the result in Fisher et al. (2022), we also

[3]We match the daily unemployment MAI with both the current and past-month unemployment rate, and the results are similar, with that using the current month slightly stronger. The current month employment information is yet to be released, although the content of the information (i.e., the labor market condition) is already taking place contemporaneously. The past-month unemployment rate, however, is released in the current month.

[4]We calculate the pre-FOMC SPX return using the S&P 500 index from the market close of the day before the FOMC announcement to five minutes before the FOMC release.

find higher increase of monetary MAI from day -5 to day -3 is associated with higher pre-FOMC stock return. Interestingly, the VIX index has no predictability for the pre-FOMC drift in long-term yield, indicating that, when it comes to the pre-FOMC pricing, the risk that matters for the equity market is not important for the bond market. The converse is also true. While the heightened uncertainty in the bond market can be best captured by the unemployment MAI, it is unimportant in explaining the pre-FOMC drift in equity.

In addition to examining the distinct components between pre-FOMC UST and SPX captured by the market-based uncertainty measures, we further explore the shared component between the two. By using the macro and financial uncertainty indexes proposed by Ludvigson et al. (2021), we find that it can capture the common risk component where higher financial uncertainty in previous month leads to larger pre-FOMC returns in both markets.

As the pre-FOMC drift in bond is realized by the market close of day -1, while that in equity is observed afterwards, we further use the pre-FOMC drift in bond to predict that in equity. We find significant predictability that a one basis point pre-FOMC reduction in 10-year yield can predict a 1.73 basis points increase in the pre-FOMC return in the S&P 500 index, with an R-squared of 2.02%. Importantly, we show that the predictive power arises primarily from the term premium component, rather than from the expected short-rate. A one-basis-point decrease in term premium at day -2 will result in approximately 2.43 basis points increase in pre-FOMC stock return and remains significant after controlling for VIX level. We also show this significant predictability only exist under heightened macro and policy uncertainties. Specifically, when the unemployment MAI is above median, a one basis point pre-FOMC reduction in 10-year yield can predict a 2.74 basis points increase in the pre-FOMC return in the S&P 500 index. By contrast, when unemployment MAI is below median, there is no relation between the pre-FOMC drift in bond and equity.

Related Literature – Our paper belongs to the literature that documents, for a broad set of asset classes, sizable positive returns realized prior to FOMC announcements. This includes Lucca and Moench (2015) on the equity market and Mueller et al. (2017) on the foreign exchange market.[5] The parallel evidence for the Treasury bond market, however, is limited, which is puzzling given the bond market's central importance in the decision and operation of monetary policy. Following Lucca and Moench (2015), the general consensus prior to our paper is that the pre-announcement drift documented for the equity market does not exist in the bond market. Against this backdrop, our paper documents a significant pre-FOMC drift in long-term Treasury bonds by focusing on a pre-announcement window that has not been examined by the previous literature.

[5]See also Liu et al. (2022) on the options market, and Javadi et al. (2018) and Abdi and Wu (2018) on the corporate bond market.

We also contribute to the growing literature on the economic driver of the pre-announcement drift, including the information channel of Cieslak et al. (2019) and the heightened uncertainty channel of Hu et al. (2022) and others.[6] While supportive of the heightened uncertainty channel of Hu et al. (2022), our paper differs in that, instead of using the market-based VIX index to measure heightened uncertainty, we take advantage of the news-based attention measures of Fisher et al. (2022), which allow use to identify exactly what kinds of uncertainty is resolved prior to the FOMC announcement. We find that the pre-FOMC drift in long-term bonds is significant only when uncertainty over the labor market condition is substantially high.

Our paper also adds to the literature on the secular decline in interest rates. A large literature has examined the decline in inflation that occurred after the great inflation (Bauer and Rudebusch, 2020; Drechsler et al., 2020). Closely related to our paper is that of Hillenbrand (2025), which shows that a narrow 3-day window around the FOMC announcement captures the secular decline in U.S. Treasury yields since 1989 and interprets the result as the dominating influence of the Fed's forward guidance released at the FOMC announcements. Our finding of the significant pre-FOMC drift breaks the 3-day window of Hillenbrand (2025) into before and after the FOMC announcements. More importantly, as the pre-FOMC drift is realized prior to the FOMC announcement, it cannot be a direct consequence of the forward guidance. Instead, we conclude that an important component of the secular decline of interest rate captured by Hillenbrand (2025) originates from the resolution of heightened uncertainty on the day before the FOMC announcement.

Finally, by examining the risk and return in long-term bonds, our paper is also related the literature that study the factors influencing the bond risk premium. Predicting bond returns using the information on the yield curve, Fama and Bliss (1987), Campbell and Shiller (1991) and Cochrane and Piazzesi (2005) provide strong evidence of time-varying risk premium in the bond market. We add to this literature by focusing on a narrow pre-FOMC window and find significant pre-FOMC returns only for long-term bonds. More importantly, instead of using market-based yield curve information to predict bond returns, we link the long-term bond risk premium directly to the macro and policy uncertainties that emerge prior to the FOMC announcement.

The remainder of the paper is organized as follows. Section 2 describes the data we use in our analysis. Section 3 presents the pre-FOMC drift in long-term bonds and its implication

[6]See also Ai and Bansal (2018) study the inter-temporal preferences that generates a nonnegative announcement premium, Wachter and Zhu (2022) build a model where agents learn the probability of an adverse economic state on announcement days, Bernile et al. (2016) investigate the informed trading prior to the announcements, Ying (2020) and Laarits (2019) study the arrival of new information during the pre-announcement period while Ai et al. (2021) model the endogenous information acquisition before FOMC announcements.

for the secular decline of long-term interest rates. Section 4 investigates the heightened uncertainty that gives rise to the pre-FOMC drift in long-term bonds. Section 4.4 compares and contrasts the pre-FOMC drift in bond and equity. Section 5 concludes.

2 Data

Our analysis explores the US Treasury yield change and stock return around scheduled FOMC meetings and our main sample period for pre-FOMC drift in both markets is from September 1994 to December 2025, following the sample tradition in Lucca and Moench (2015). During this period, we have 250 scheduled releases of FOMC meetings. We also extend our sample period back to 1980 for US Treasury market.

Treasury Yield: We use the zero coupon yield data, term premium and short-rate expectation yield from Adrian et al. (2013). Additionally, we include the daily one-year forward rate beginning at 9-, 4-, 1- year from Gürkaynak et al. (2007). These forward rate is the yield at which an investor commits today to invest over a defined period in the future: for m-years beginning n years hence (Gürkaynak et al., 2007). One-year forward rate beginning at 9-year can be understood as buying 10-year Treasury and selling 9-year Treasury bond with corresponding portfolio weight. In addition to the zero coupon yield, we further include constant maturity yield which is obtained from the Federal Reserve Board website.[7] We also use the daily actual Treasury transaction data and daily return of the Fixed Term Index from CRSP to check the robustness of the result. Finally, we define the pre-FOMC UST drift as the yield change from day -2 to day -1 prior to the FOMC announcement, which does not contain FOMC meeting's outcome.

High-Frequency Data: For stock return, we choose intraday S&P 500 index from NYSE Trade and Quote (TAQ). We calculate the pre-FOMC SPX return from the day before a scheduled FOMC announcement (4 pm) to five minutes prior to the exact release time (ann − 5min). We use the 10-Year U.S. Treasury Note futures, trading almost around the clock, to plot the pre-drift return in bond market before FOMC meeting.[8] We obtain the tick by tick data on E-mini Treasury futures from January 2004 to June 2025 from the Chicago Mercantile Exchange (CME). We also obtain E-mini S&P 500 index futures from CME. Followed Hu et al. (2022), we select the most active futures contract with the highest trading volume.

Macroeconomic Attention Indices: We obtain Macroeconomic Attention Indices proposed

[7] https://fred.stlouisfed.org/series/DGS10

[8] We have missing futures trading data on several trading days in our sample period. One of these trading days, January 29, 2014, is a scheduled FOMC release day.

by Fisher et al. (2022).[9] They construct macroeconomic attention indices (MAI) based on news articles published in the New York Times and Wall Street Journal. Following their approach, we use the demeaned monetary MAI and unemployment MAI three days before FOMC meeting in this paper as proxy for heightened uncertainty measure about Federal fund rate and unemployment rate. We also collect the relevant information such as timing, date, actual and survey number on unemployment rate data from Bloomberg Economic Calendar.

Uncertainty and Volatility Measure: We use the VIX index of implied volatility from S&P500 options as well as the MOVE index as our benchmark index for market participants' uncertainty. Daily VIX and MOVE indexes are downloaded from Bloomberg. In addition to marketed-based uncertainty measures, we also use the macro and financial uncertainty indexes proposed by Jurado et al. (2015). The macro uncertainty index reflects a shared component in the time-varying volatilities of h-step-ahead forecast errors across a wide range of macroeconomic series, which include variables from three categories: real activity, prices, and financial data (Ludvigson et al., 2021). The financial uncertainty is constructed using the same method but based solely on financial market data.

Monetary Policy Shock: We collect actual monetary policy decision and expected component of that decision from Kuttner (2001) whose dataset ends in June 2019. We further use the monetary policy shock from Bauer and Swanson (2022) where they calculate high-frequency changes in interest rates during 30-minute window around FOMC announcement such as 2-, 5- and 10-year treasury future. Furthermore, Bauer and Swanson (2022) construct the monetary policy shock (MPS) by extracting the first principal component of high-frequency changes in Eurodollar futures rates (ED1 to ED4). To mitigate the "information channel" issue, wherein macroeconomic information can predict subsequent monetary policy surprises, they propose an orthogonalized measure of monetary policy shocks by taking residuals from a regression of the MPS onto six macroeconomic and financial variables. Finally, we also incorporate the target (surprises about the current federal funds rate target) and path (the expected path of the federal funds rate for the next several months) factors derived by Gurkaynak et al. (2005) to enrich our analysis.

Table 1 provides summary statistics for the main variables used in our empirical analysis on pre-FOMC windows and at other times for the main variables used in our empirical analysis. For the days outside the pre-FOMC window, daily zero-coupon yield changes Adrian et al. (2013) for the 10-year and 2-year Treasury bonds are averaging -0.01 and -0.02 basis points, respectively. By contrast, during the pre-FOMC window which is one day prior to the FOMC announcements, the long-term yields experience substantially greater declines. The 10-year yield declines by an average of 0.79 basis points, while the 2-year yield drops in-

[9]We thank Jinfei Sheng for sharing the updated data which ends in 2023 with us

significantly by only 0.25 basis points. Interestingly, the 3-month-ahead federal funds futures rate increases slightly by 0.32 basis points during the same period. The contrasting behavior of long-term and short-term yield change before the FOMC meetings will be discussed in more details later.[10]

For various uncertainty and volatility measures, we choose to the pre-FOMC window at day -3 to form the ex-ante measure for the pre-FOMC drift. The unemployment MAI and monetary MAI three days before the FOMC announcements is on average smaller than other days because the MAI typically peak on the day after the announcements. The VIX, MOVE, macro and financial uncertainty indexes are around the same magnitude before the FOMC announcements and for other normal days.

3 The Pre-FOMC Drift in Long-Term Treasury Bonds

Scheduled eight times per year, the FOMC meetings serve as an informational central, where key monetary policy decisions are announced and the Fed's information and forecast of the macro economy revealed. The uniqueness and significance of these meetings have drawn considerable attention from both market participants and academic researchers. Most existing studies focus on the post-FOMC window, examining how short-term Treasury yields adjust once the Fed's policy decision becomes public. In the early 2000s, Kuttner (2001) exploits the FOMC announcement setting to construct a measure of monetary policy shocks based on market reactions after the FOMC announcement. Since then, a growing body of literature has utilized the post-FOMC setting to analyze the interaction between monetary policy and financial markets, aiming to identify policy surprises and assess the effectiveness of monetary interventions (Bauer and Swanson, 2022; Bernanke and Kuttner, 2005; Gurkaynak et al., 2005; Nakamura and Steinsson, 2018).

It was not until the seminal work of Lucca and Moench (2015), who document significant average equity returns in the 24-hour window preceding FOMC announcements for both U.S. and international markets, that attention shifted toward the pre-FOMC period. Not only the market expectation of Fed's policy are formed, the risk and return dynamic is also prominent before the actual announcement of the FOMC meetings. Since then, a growing literature has examined pre-FOMC effects across various asset classes, including exchange rates, options, and corporate bonds (Javadi et al., 2018; Liu et al., 2022; Mueller et al., 2017).

[10]Regarding the relationship between the term premium and the expected short-rate yield, the correlation tends to be more negative during the pre-FOMC period. For instance, the correlation between the changes in the 2-year expected short-rate yield and the 10-year term premium is approximately -0.33 one day prior to FOMC announcements, compared to around -0.21 on other days.

3.1 The Pre-FOMC Drift in UST10

The "pre-FOMC stock drift puzzle" that why large stock returns are realized before but not after FOMC announcements, as documented by Lucca and Moench (2015) has prompted substantial academic attention and various explanatory efforts (Cieslak et al., 2019; Hu et al., 2022). However, less attention has been paid to another puzzle highlighted in the same study: the absence of a similar pre-announcement drift in the U.S. Treasury market. The general consensus prior to our paper is that the pre-announcement drift documented for the equity market does not exist in the bond market (Balduzzi and Moneta, 2017; Cieslak and Pang, 2021).

The limited evidence for the parallel pre-FOMC drift for the Treasury bond market is puzzling given the bond market's central importance in the implementation and transmission of monetary policy. FOMC decisions directly impact short-term interest rates, which are most immediately reflected in Treasury securities. Compared to equities or currencies, the Treasury market should, in principle, be more sensitive to upcoming policy announcements. If FOMC meetings are so important that drive stock investors' attention and uncertainty, then why bond investors behave differently?

By focusing on the pre-FOMC window in U.S. Treasury market, we find positive and significant returns (i.e., negative yield changes) on long-term Treasury bonds before the FOMC announcement. Our approach differs from Lucca and Moench (2015) in a key way: rather than analyzing the 24-hour window before the FOMC release, we examine the day before the announcement, which also marks the first day of the two-day FOMC meeting. We find that, unlike in the equity market, the pre-FOMC drift in bond yields occurs earlier, revealing a distinct timing difference across asset classes.

Panel A of Figure 1 shows both the average cumulative return of the UST future and the S&P500 index, minute by minute around FOMC announcements. The sample in this plot is from January 2004 to June 2022 due to the availability of UST future data, including only the scheduled FOMC meetings. To better compare the pre-FOMC drift on the stock and bond market, we normalize the return by their respective daily standard deviation. The solid blue line is the average normalized cumulative UST return on three-day windows which is the day prior to the meeting, the day of the meeting and the day after the meeting. The blue-shaded areas are pointwise 95% confidence bands around the average cumulative UST returns while the red line and red shaded areas are for SPX return. The grey-shaded areas are the regular trading hours in the U.S. market. The solid vertical line is set at 2:00 pm Eastern Time.

For the stock market, the upward drift mostly happens overnight before the FOMC release which is consistent with the works of prior literature. However, we can see an upward drift

on the UST market from day -2 to day -1 before the FOMC announcements, which also happens mostly during the overnight period. Previous literature investigates how fix income securities react to the upcoming FOMC announcement and show there is no drift in the 24-hour window before the meeting or on the FOMC announcement day. Lucca and Moench (2015) show the pre-announcement drift does not exist in fixed-income securities. Cieslak and Pang (2021) present similar results and attribute this to a hedging premium, wherein bonds serve as a hedge against cash-flow risk in equities. However, Hu et al. (2024) provide evidence that U.S. Treasuries became a source of risk on FOMC announcement days with high stock-bond correlations. This suggests that the hedging channel may no longer be the dominant mechanism, especially given the direct influence of monetary policy on Treasury yields.

Prior literature only focuses on UST yield movement at the same pre-announcement window as equity, namely from 2 pm on the day before a scheduled FOMC announcement to 2 pm on the announcement day. Indeed, we can see from Figure 1 that the 10-Year U.S. Treasury does not move much during the same pre-announcement window as the pre-FOMC SPX. However, when we extend the pre-announcement window to include the overnight period from day -2 to day -1, a clear and significant response emerges in long-term Treasury yields. Skipping the overnight window two days before the FOMC announcement is the reason why earlier studies miss this important result. Our findings reveal that the pre-FOMC drift is not limited to the equity market (Lucca and Moench, 2015) and the exchange rate market (Mueller et al., 2017), but is also present in the U.S. Treasury market with an earlier realization window, specifically on the day before the FOMC announcement.

We further plot the cumulative pre-FOMC drift in long-term bond and equity markets over time in Panel B of Figure 1. The pre-FOMC window for bond market is from day -2 to day -1 while for stock market is from day -1 to 5 minute before the FOMC announcement. The y-axis for the 10-year Treasury yield is inverted so that declining yields, which correspond to positive bond excess returns, move upward in the same direction as equity returns, making the common upward trend visually salient. The persistent comovement highlights that the pre-FOMC drift reflects a risk-premium channel rather than pure information effects: if markets were only reacting to monetary policy news without bearing risk, there would be no systematic upward accumulation in either series. Instead, the synchronized drift prior to announcements suggests a shared compensation for bearing policy-related uncertainty that is resolved before the FOMC release, which will be discussed in detail later.

As shown in Figure 1, the significant pre-FOMC UST is realized during overnight trading period from day -2 to day -1. A natural question arises: who is trading the U.S. Treasuries during this time? To shed some light on this question, we mark the opening and closing times of the Tokyo and London markets in Figure 5, using Eastern Time (ET). The figure

begins at 16:00 ET, which marks the end of the U.S. stock trading day. The futures markets for both stocks and Treasuries close at 17:00 ET and reopen at 18:00 ET, coinciding roughly with the start of trading in Australasia. The Tokyo market typically opens at 19:00 ET and closes at 4:00 ET, while the London market opens at 3:00 ET and closes at 12:00 ET, so there is one hour overlap between Tokyo and London trading.

The decomposition of trading activity in Figure 5 reveals that the pre-FOMC yield decline is primarily driven by foreign investors during overnight hours. The average cumulative return on U.S. Treasury futures begins to rise at 19:00 ET on day -2, coinciding with the opening of the Tokyo market, and peaks at 12:00 ET on day -1, aligning with the closing of the London market. The average 10-year Treasury return over this foreign trading period is approximately 6.9 basis points, with a statistically significant t-statistic of 2.24. In contrast, during the remainder of the day (12:00 ET–17:00 ET) leading up to the FOMC meeting, the return is around -2.40 basis points, with t-statistic around -1.95.

What's interesting is that when bond return declines after the London market closes, stock return begins to rise. Lucca and Moench (2015) examines the 24-hour window before FOMC announcements and shows that stock prices start increasing after 14:00 ET on day -1. In Figure 5, we further push the starting point of the pre-FOMC SPX to 12:00 ET. The contemporaneous increase in the stock return and decrease in the treasury return after the London market closes on day -1 reflect the well-documented negative stock-bond correlation (Hu et al., 2024). During the pre-FOMC windows, the uncertainty first resolves in the U.S. Treasury market mostly during the overnight trading hours from day -2 to day -1 when the foreign investors are actively trading. After the London market closes on day -1, the uncertainty gets resolved in stock market leading to the famous pre-FOMC stock drift.

3.2 Term Structure of the Yield Curve

Going beyond the long-term Treasury bond, we further investigate the term structure of the Treasury bond in Panel A of Figure 2. We calculate daily raw return for n = 0.5, 1, 2, ..., 9, and 10 years zero coupon bonds following Adrian et al. (2013) and plot the average bond return of different maturities for day -1 before the FOMC announcement in blue and for normal days outside the FOMC window in green. On day -1, the average return of the 10-year bond is around 10 basis points, which is significantly different from normal trading days. In contrast, short-maturity bonds show almost no difference from non-FOMC days. For example, the 6-month bond return is small and statistically indistinguishable from the normal day benchmark. This pattern implies that the pre-FOMC drift is significant only for long-term bonds, but not in short-term bond.

We further investigate the term structure of the Treasury in yield space by calculating the

change of zero-coupon yield from Adrian et al. (2013) for different maturities and for different window around the FOMC meetings in Table 2. The announcement day of the FOMC meetings is marked by FOMC[0] and the days preceding the announcements are marked by FOMC[-n]. The results reveal a clear and economically meaningful pre-FOMC drift in the Treasury market, concentrated in long-term bonds on the day before the announcement. Specifically, on the day before the FOMC announcement, the 10-year bond yield drops by a significant 0.79 basis points, compared with a full-sample average of -0.04 basis points. Importantly, this pre-FOMC yield reduction is both statistically significant and uniquely concentrated in the long end of the curve. In contrast, over the same window, the 2-year yield decreases by a statistically insignificant 0.25 basis points, and the 3-month-ahead federal funds futures rate actually increases by 0.33 basis points.

This divergence in yield behavior between the long and short ends of the curve is particularly striking, given that short-term instruments such as the 2-year yield and fed funds futures are generally more responsive to monetary policy surprises. The muted response of short-term yields suggests that the pre-FOMC drift in long-term Treasury yields is not driven by anticipated changes in the policy rate itself. Rather, it likely reflects more about the pricing of non-monetary components, such as risk premium or uncertainty, surrounding the FOMC meeting.

To further explore this divergence, we test the relationship between the daily yield change of the 10-year Treasury and the 3-month-ahead Fed funds future contract in Table 3 where the dependent variable is the daily zero-coupon 10-year Treasury yield change. The first column shows the 10-year yield will drop significant additional 0.77 basis points one day before the FOMC announcement. The coefficient in the second column is positive at 0.62 and highly significant, which shows a strong positive co-movement between long-term and short-term yield changes during normal times. When short-term yield increase 100 basis point, the 10-year yield will increase 62 basis point simultaneously.

The third column presents evidence of the reduced co-movement between the long-term yield change and the short-term yield change on the day before the FOMC meetings, showing the uniqueness of the pre-FOMC window. The interaction term between FF4 and FOMC[-1] is -0.28, significant at the 10% confidence level, indicating the usual comovement between the long and short rates is significantly reduced on FOMC[-1], indicating a driver to the long rate not shared by the short rate. This divergence stems from the sharp drop in long-term yields coupled with the muted movement in short-term rates, as also reflected in Table 2.

Under typical market conditions, the strong positive correlation between yields across maturities is largely attributed to the level factor, which induces parallel shifts in the yield curve. However, the decoupling observed on FOMC[-1] suggests an increased role of the slope factor, which affects short- and long-term yields differently and leads to changes in the

steepness of the curve. This shift in dynamics underscores the distinct behavior of the yield curve ahead of policy announcements.

To better understand the specialness of the pre-FOMC window for Treasury bond, we perform principal component analysis (PCA) approach on the covariance matrix of the yield changes ranging from 1-month to 10-year yields. In addition to doing PCA on all trading days as usual, we take a step further by focusing on the FOMC windows. Specially, we first extract the yield change on FOMC announcement day from September 1994 to December 2025 which amounts to 250 observation days in total. We then apply the PCA analysis on the covariance matrix estimated using the yield changes on the FOMC announcement days and calculate the explanatory powerful of the first principal component (PC1) and second principal component (PC2). We repeat the same process for the FOMC window from day -4 to day +1 around FOMC meetings and plot the relative importance of PC1 and PC2 in the Panel B of Figure 2. We also calculate the relative importance of PC1 and PC2 for all trading days and plot in with dash black line.

The PCA analysis on FOMC windows confirms the uniqueness of the day before the FOMC meetings for Treasury bond. On the normal trading days from 1994 to 2025, the first PC accounts for 76% of the total variance and the second PC accounts for 14% as shown by the black dash line in Figure 2. On the day before the FOMC announcements, the relative importance of PC1 represented by the blue line decreases to 52% and the relative importance of PC2 represented by the red line increases to 37%. This finding demonstrates that the co-movement in the entire yield curve, captured by the level factor, weakens one day before the FOMC announcements, while the divergence, captured by the slope factor, strengthens. This is primarily driven by the declining long-term yield, occurring not on or after the FOMC announcement day but rather in the period leading up to the announcement. Traditionally, investors and academia, especially in the field of fixed income, have focused more on the announcement day of the Fed's policy and how asset prices react to the monetary policy afterward (Bauer and Swanson, 2023; Brooks et al., 2018; Gurkaynak et al., 2005; Kuttner, 2001; Nakamura and Steinsson, 2018). This paper highlights the distinctive nature of the reduced co-movement across the yield curve in the pre-FOMC window, emphasizing the need to study the Treasury market thoroughly before FOMC meetings.

3.3 Secular Decline in Long Term Interest Rates

As pointed out by Ben Bernanke, low-interest rate is part of the long-term trend instead of a short-term aberration[11]. Numerous papers try to explain the persistent decline in long-term yields, attributing it to factors such as lower inflation expectations, reduced productivity

[11]See "Why are interest rates so low?" by Ben Bernanke, Brookings Institute, 2015.

growth, and a global savings glut, among others. Hillenbrand (2025) studies the secular decline in long-term yield from a unique perspective that a narrow 3-day window around FOMC meetings captures the secular decline in U.S. long-term Treasury yields and attributes this pattern to forward guidance from the Fed revealed at the announcement. Building on his work, our finding of the significant pre-FOMC drift decomposes the 3-day window into before and after the FOMC announcements. We find that the pre-FOMC UST contributes significantly to the narrow 3-day window and indicates the presence of a second channel other than forward guidance in explaining the secular decline of long-term yields, and thereby complements Hillenbrand (2025).

We first replicate and extend the Figure 1 in Hillenbrand (2025) from June 1989 to 2025, including the scheduled and unscheduled FOMC meetings and utilizing the constant maturity yield from the Fed.[12] The black line on the top of Figure 3 shows the actual evolution of the 10-year U.S. Treasury yield from 1989 and the red line is the hypothetical time series of cumulating yield changes of 10-year U.S. Treasury bond over the 3-day window for all FOMC meetings. It shows the secular decline in long-term bond yields appears to be concentrated in a narrow 3-day window around FOMC meeting.

What we are interested in this paper is the contribution of the pre-FOMC window to the overall decline in long-term bond yields captured by narrow 3-day windows around the FOMC meeting. To investigate this, we isolate the pre-FOMC component by plotting the cumulative yield change for 2-day windows excluding the day -1 in Panel A of Figure 3 with blue color for all FOMC meetings. We find that the 10-year yield declined by approximately 3.09% over the pre-FOMC window from June 1989 to 2025, accounting for nearly 40% of the total 7.91 percentage-point decline over the three-day window. The result reveals that a substantial portion of the 3-day window yield decline originates from the pre-FOMC window from June 1989 to 2025.[13]

We further separate the 3-day window into pre-FOMC, FOMC, and post-FOMC windows capturing the 10-year U.S. Treasury yield in the lower plot of Figure 3 for scheduled FOMC meetings from September 1994 to 2025. The 10-year yield in pre-FOMC windows shows a steady decline while the post-FOMC yield movement displays an interesting pattern with an upside trend between 2012 and 2016. One critique raised by Hillenbrand (2025) against the risk premium explanation to explain the 3-day FOMC pattern is that the FOMC window

[12]Following the FOMC dates convention in the appendix of Hillenbrand (2025), we use the day after the meeting as day 0 for scheduled meetings before 1994. For unscheduled meetings before 1994, day 0 is the meeting day when the market learned about changes in the federal funds rate as identified by Kuttner (2001).

[13]A similar pattern is evident when restricting the sample to scheduled FOMC meetings, which is the focus of our paper.

captures the low-frequency long-term yield movements even when they tended to drift sideways or upwards. However, by separating the 3-day windows instead of grouping together, we can see the ability to capture the upward trend mostly come from the post-FOMC window rather than the pre-FOMC window. Therefore, the pre-FOMC decline remains consistent with a risk-premium channel taking place before the announcement.

Another noteworthy observation is that the majority of the yield decline in the 3-day windows around FOMC meetings does not occur on FOMC announcement days before March 2022. This observation offers insight into why prior literature find the absence of a pre-FOMC drift in the Treasury bond market. It's because they often focus solely on the FOMC announcement day. The results in Table 2 are consistent with the message in Figure 3 that the secular decline in long-term bond yield happens mostly on the day before FOMC, which makes the 10-year yield change during the pre-FOMC window on average significantly negative but not for the FOMC day or the day after the FOMC meeting, even though the magnitude of day 0 and day -1 is almost the same. It further strengthens the importance of investigating the pricing of long-term Treasury bond before rather than during or after the FOMC meetings.

An additional stylized fact emerges around the onset of the tightening cycle in March 2022. Prior to this date, yield declines within the three-day FOMC window are overwhelmingly concentrated on the day preceding the announcement, with little systematic response on the announcement day itself. After March 2022, however, this pattern changes markedly. As shown in Figures 3, the 10-year Treasury yield exhibits a large and statistically significant decline on the FOMC announcement day, in contrast to its negligible average response in the earlier period. Moreover, this day 0 decline in long-term yields largely unfolds during the post-meeting press conference (Acosta et al., 2025).

Consistent with recent evidence that press conferences have become the dominant source of monetary policy news in the tightening cycle, yield movements on day 0 frequently reflect revisions to market interpretations that occur after the release of the FOMC statement. In particular, during several meetings in 2022 and 2023, initially hawkish signals in the statement were followed by declines in long-term yields over the course of the press conference, suggesting that market participants revised their assessment of the Fed's policy stance as being less hawkish than initially inferred. As a consequence, the three-day event window around FOMC meetings no longer capture the increasing trend of long-term yield during the tightening cycle from 2022 to 2023.

3.4 Model-based Yield Decomposition: Term Premium

To gain a more comprehensive understanding of the pattern between long-term and short-term yield changes around FOMC meetings, we extend our analysis to include daily term premium and expected short-rate yield change at different maturities from Adrian et al. (2013) in Table 2[14]. The results in Panel A of Table 2 show that the significant yield decline on FOMC[-1] is primarily driven by the term premium component. Specifically, the 10-year term premium (TP10) decreases by 0.71 basis points on the day before the FOMC meeting, with a t-statistic of -2.36, accounting for the majority of the 0.79 basis point drop in the 10-year yield (UST10). Meanwhile, the corresponding change in the 10-year expected short rate (EH10) is a statistically insignificant -0.08 basis points. A similar pattern is observed at the 5-year and 2-year maturities: term premium components (TP5 and TP2) show moderate declines of 0.59 and 0.33 basis points, respectively, while the changes in expected short-rate yields (EH5 and EH2) are negligible and statistically insignificant.

The yield decline is strongest at the 10-year horizon and becomes weaker for shorter maturities, reinforcing the notion that the pre-FOMC drift is a long-term phenomenon. These findings suggest that the pre-FOMC yield decline is primarily driven by adjustments in term premia rather than shifts in expectations about the short-rate path. We perform the robustness check by excluding the financial crisis from 2008 to 2009 in Table A2. The pre-FOMC yield change of 10-year (2-year) bond excluding the financial crisis is around -0.72 (-0.11) basis points which is smaller than the full sample while the 10-year term premium decreases 0.74 basis points which is bigger in magnitude than the full sample around -0.65 basis points. It shows the yield decrease during financial crisis is linked to short-term yield instead of the term premium which is the focus of our paper.

Moreover, the standard deviations reported in Panel B reveal a clear divergence in volatility patterns across maturities and components on the day before FOMC announcements. Specifically, the standard deviation of the 10-year term premium drops to 4.77 basis points on FOMC[-1], lower than its average of 5.20 basis points and also than its previous level around 4.81 basis points, indicating reduced volatility in the long-term risk compensation component. In contrast, the volatility of expected short-rate components increases on FOMC[-1], reaching 4.72 basis points for 2-year expected short-rate, higher than its full-sample averages. Similarly, short-term yields such as current month fed fund future (FF1) also exhibit elevated volatility (6.48 bps on FOMC[-1] vs. 3.62 bps on average), consistent with the idea that short-end rates are more sensitive to the flow of monetary policy information, resulting in more price fluctuations and higher volatility. This contrasting pattern supports the inter-

[14]We also repeat the same analysis on the term premium calculated by Kim and Wright (2005) and the results are similar.

pretation that, in the short end of the curve, new information about the Fed's policy stance is actively incorporated into prices, leading to increased volatility. In contrast, the decline in long-term yield volatility–particularly in the term premium–suggests that uncertainty is being resolved ahead of the FOMC announcement.

Figure 4 decomposes the cumulative 10-year yield changes around FOMC announcements into the term-premium (TP) and expected short-rate (EH) components. Panel (a) shows that the persistent yield decline on day -1 is driven almost entirely by a reduction in TP. This dominance becomes even more striking when viewed over the long sample from 1994 to 2022: the pre-announcement window accumulates a steady downward drift in the term premium, while the expected short-rate mostly drop around the financial crisis. Panel (d) provides an informative benchmark by decomposing yield changes over all trading days. In the full sample, both TP and EH contribute meaningfully to long-term yield dynamics, suggesting TP and EH are equally important driving the long-term yield change over the full sample.

We further show different pricing between day -1 and day 0 in Panel (b), which reveals a sharp contrast: the yield reaction is dominated by changes in expected short rates. This finding is consistent with the "long-run Fed guidance" channel emphasized in Hillenbrand (2025), where new information released at the FOMC meeting shifts expectations about future short-rate paths and hence the level of long-term yields. A further intriguing observation arises when comparing Panels (a) and (c). The post-announcement window (day +1) exhibits a similar pattern to day -1, with a continued TP-driven decline. The fact that TP declines before and after the announcement but not during it is puzzling, because it suggests that the forces driving the risk-premium channel are temporarily overshadowed when the Fed reveals new information. Understanding why the TP mechanism pauses precisely at the announcement remains an open question and points to a subtle interaction between information effects and uncertainty resolution yet to be fully explained.

Together, these results highlight the different drivers of yield changes across the curve: expected short-rate respond predominantly on the announcement day, reflecting the immediate policy decision, whereas term-premium adjust earlier, reflecting shifts in risk premiums. These results suggest that the short end is primarily influenced by information arrival and policy expectations, while the long end incorporates an additional risk dimension – particularly the resolution of uncertainty and the associated term premiums decline.

4 The Risk Premium Channel

We show that the positive pre-FOMC returns on U.S. Treasuries occur earlier than in equities, specifically, on the day before the FOMC announcement. To understand the mech-

anism behind this pre-FOMC drift, we investigate its underlying drivers. This pre-FOMC window offers a unique lens into risk and return in long-term bonds, which are closely linked to macroeconomic and policy uncertainty.

A key feature of the pre-FOMC period is the sharp divergence between long- and short-term yields, observed only on the day before the announcement. This divergence suggests that the pre-FOMC drift in long-term yield is dominated by the risk-premium channel, not the monetary-policy decision on the target rate. In contrast, the short-term yield such as 3-month-ahead federal funds future rate (FF4) prior to the FOMC meetings is known to do price discovery of the Fed's monetary policy decision in the future. The insignificant FF4 one day before the FOMC announcement implies the information discovery channel because the monetary decision could be easing or tightening and on average cancel out each other, especially for the sample between 1994 to 2022 in our paper. On the contrary, the significant positive pre-FOMC stock and long-term bond return point to an additional risk premium channel to generate the persistent positive return as the risk compensation that investors require for bearing the risk before the announcements of the FOMC meetings.

To shed further light on the risk-premium channel, we build our hypothesis on the two-risk model of Hu et al. (2022), which attributes the pre-announcement drift to the resolution of heightened uncertainty prior to the announcement. Central to the model is the incorporation of an impact uncertainty, which controls the market impact of the announcement shock. To the extent that market participants are highly uncertain about an impending announcement, it is reflected in the model via a volatile impact uncertainty, which in turn drives up the premium for impact uncertainty. Upon the resolution of the heightened uncertainty prior to the announcement, the risk premium for impact uncertainty is also realized, giving rise to the pre-announcement drift.

At the heart of Hu et al. (2022) is the accumulation of heightened uncertainty and its subsequent resolution prior to the announcement. The model, however, is silent on exactly what kind of uncertainty is resolved. This prompts the question: what specific risks do investors need to be compensated for when holding long-term yields prior to the FOMC meetings? As highlighted by Cochrane et al. (2005), it is crucial to understand the macroeconomic risks underlying the factor risk premia. Taking advantage of the fact that the risk involved in bond pricing is substantially less complex than that in equity pricing, we are able to identify the macro and policy uncertainties that give rise to the pre-FOMC drift in long-term bonds.

4.1 Heightened Uncertainty and Subsequent Resolution

Important to the heightened uncertainty channel is the mechanism of resolution of uncertainty, which takes place during the pre-announcement window and in turn gives rise to the premium for heighten uncertainty (i.e., the pre-announcement drift). Focusing on the daily changes in market uncertainty leading up to the FOMC announcements in Table 4, we show that uncertainty in U.S. Treasury market resolves earlier than in U.S. equity market.

Table 4 examines the dynamics of market-based uncertainty measures surrounding FOMC announcements and highlights a sharp contrast between the equity and bond markets. Consistent with Hu et al. (2022), the VIX, a gauge of equity-market impact uncertainty, increases from day -3 to day -1, showing the accumulation of heightened uncertainty. We also observe its subsequent resolution that VIX declines from day -1 to day 0, and a substantial portion of this reduction occurs during the pre-FOMC window in which the stock-market drift is realized. However, VIX increases from day -2 to day -1, precisely when the treasury-market drift is realized. This timing mismatch indicates that VIX primarily reflects uncertainty resolution in the equity market, but not the earlier resolution in the bond market that drives the pre-FOMC drift in long-term Treasury yields.

We therefore turn to the MOVE index, which measures the market's expectation of near-term volatility in the Treasury market. MOVE exhibits a mild, statistically significant at 10% level, decline from day -2 to day -1. To isolate the component independent of equity-market volatility spillover, we further construct an *orthogonalized MOVE* index ($\text{MOVE}^{\perp}$) by regressing MOVE on VIX and using the residual. Table 4 shows the change of VIX and $\text{MOVE}^{\perp}$ around the FOMC announcement. There is a clear difference in timing between the resolution of uncertainty in bond and equity markets around FOMC meetings. The orthogonalized MOVE index, which isolates Treasury market specific uncertainty, exhibits a sharp and statistically significant decline on day -1, precisely coinciding with the realization of the pre-FOMC drift in long-term Treasury yields. By contrast, equity-market uncertainty, as measured by the VIX, declines primarily on the announcement day itself when the pre-FOMC drift in stock market happens.

This difference in timing suggests that uncertainty in the Treasury market is resolved earlier than uncertainty in the equity market. In particular, the decline in $\text{MOVE}^{\perp}$ on day -1 indicates that bond investors begin to price in the resolution of policy-related uncertainty ahead of the FOMC announcement, whereas equity investors adjust primarily in response to information revealed in the previous Treasury bond market. The fact that the pre-FOMC drift in long-term yields aligns closely with the decline in bond-specific uncertainty, but precedes the resolution of equity-market uncertainty, reinforces the interpretation that the pre-FOMC drift reflects a risk-premium channel rather than pure information of monetary

policy shock on FOMC announcement day.

To shed light on the role of uncertainty resolution in driving the pre-FOMC drift, we exploit the relationship between the orthogonalized MOVE index and the 10-year term premium from day -2 to day -1 in a regression setting. We regress the change in the term premium on day -1 on the change in orthogonal MOVE over the same window. We find a strong positive association in upper plot of Figure 6: larger reductions in Treasury-market uncertainty are associated with more pronounced declines in the term premium with a 7.3% R-square.

We show a scatter plot of term premium change and orthogonalized MOVE change in top panel of Figure 6 to see the positive relationship more clearly. The y-axis for the 10-year term premium is inverted so that declining yields, which correspond to positive bond excess returns, move upward in the same direction as equity returns. We further highlight some FOMC meetings to illustrate the mechanism.

The first is the August 9, 2011 FOMC meeting, highlighted in the figure. On the day before the FOMC meeting, orthogonalized MOVE sharply declined as investors anticipated accommodative monetary policy following severe financial-market stress and the U.S. sovereign rating downgrade by S&P on August 5. The FOMC ultimately announced its explicit forward-guidance commitment to keep the federal funds rate near zero "at least through mid-2013," a surprise that removed substantial uncertainty surrounding the near-term policy path. Consistent with our mechanism, this early resolution of uncertainty was accompanied by a large drop in the term premium on day -1, generating significant positive pre-FOMC returns in long-term Treasuries.

By contrast, the September 16, 2008 FOMC meeting, held immediately after the Lehman Brothers bankruptcy, provides an example where uncertainty did not resolve ahead of the announcement. Despite intense market attention, investors faced unprecedented uncertainty regarding systemic risk and the scope of the Federal Reserve's intervention. The orthogonal MOVE index remained elevated and even increased going into day -1, reflecting heightened volatility and unresolved concerns about financial stability. Correspondingly, the term premium did not exhibit the same pre-FOMC decline observed in more typical resolution episodes. These contrasting cases reinforce our interpretation: when uncertainty resolves in advance of the announcement, as in August 2011, the term premium falls and a strong pre-FOMC drift in bond market emerges; when uncertainty remains unresolved, as in September 2008, the mechanism is muted.

For comparison, the lower panel conducts an analogous analysis in the equity market and reveals a similarly significant negative relationship between pre-FOMC VIX changes and pre-FOMC equity returns, which happen from day -1 to 5 minute before the announcement. This is well documented phenomenon in previous literature (Ai et al., 2021; Hu et al., 2022) that

decrease in VIX is accompanied with increase in stock return, especially during the pre-announcement period. The two illustrative events discussed above also manifest clearly in equities. Ahead of the August 9, 2011 FOMC meeting, equity-market uncertainty declined sharply as investors anticipated accommodative policy support, generating a strong pre-FOMC rally in the S&P 500. In contrast, prior to the September 16, 2008 meeting following Lehman Brothers' bankruptcy, uncertainty escalated rather than dissipated, and the pre-FOMC equity return even drop.

Together, these results indicate that in both U.S. Treasury and equity market, greater resolution of market-specific uncertainty prior to the FOMC announcement is associated with larger pre-FOMC drifts. The evidence therefore supports the view that the pre-announcement drift reflects a premium for resolving heightened uncertainty, realized specifically in the narrow window leading into the FOMC decision.

4.2 Macroeconomic Attention Indices: Unemployment Rate

A natural question arises as to whether the pre-FOMC drift is systematically linked to the state of the real economy. Given the central role of labor-market conditions in driving policy accommodation, we study how the pre-FOMC drift co-moves with unemployment, one of the key determinants of monetary policy under the Federal Reserve's dual mandate. We compute the pre-FOMC drift in bond market using CRSP 10-year Treasury returns, translating yield movements into return space, and smooth the series using an EWMA method to highlight its cyclical variation. Upper panel of Figure 7 shows that the pre-FOMC drift in bond market increase sharply when unemployment is elevated, including during the 2001 recession, the Global Financial Crisis, and the onset of the COVID-19 pandemic.

To find high-frequency evidence, we adopt the macro attention index (MAI) proposed by Fisher et al. (2022) as a proxy for uncertainty measure regarding the macro fundamental. The MAI is derived from news articles in prominent publications such as the New York Times and Wall Street Journal, offering novel metrics of attention to various macroeconomic risks, including unemployment and monetary policy. Consistent with endogenous information acquisition, Fisher et al. (2022) observe investors' attention about monetary policy rises roughly three days before scheduled FOMC announcements and show high pre-announcement attention to monetary policy predicts high announcement-date stock market returns.

One advantage of using the MAI as proxy for attention or uncertainty measure lies in its close connection to different macroeconomic fundamentals. Compared with the uncertainty measures extracted from capital markets (e.g., the option-implied VIX and MOVE indices), the MAI indices offer topic-specific granularity since each MAI is associated with a specific

category of macroeconomic news, enabling researchers to isolate which dimensions of the economy (e.g., labor markets or monetary policy) are driving investor sentiment. For example, an increase in the unemployment MAI indicates heightened uncertainty with respect to the labor market condition.

We examine whether this attention measure becomes more tightly linked to its underlying macroeconomic fundamental which is the unemployment rate around the FOMC meetings. To so do, we match daily unemployment MAI with the contemporaneous monthly unemployment rate, given the unemployment rate is monthly series. Although the current month's employment data will not be released until the following month, the content of the information (i.e., the labor market condition) is already taking place contemporaneously. We also use the unemployment rate from previous month as the robustness check and the results are similar.

The first columns in Table 5 examine the contemporaneous relationship between unemployment MAI with unemployment rate. When the contemporaneous unemployment rate is elevated, the unemployment MAI also experiences a significant increase with a R-squared around 15%. It is consistent with the findings in Fisher et al. (2022) that employment attention intensifies in response to higher unemployment rates and increases more when it is associated with bad news.

We further explore whether this relationship strengthens in the days leading up to FOMC meetings, given the increased focus on labor market conditions during this period. Our findings, illustrated in column (2) of Table 5, reveal a significantly positive interaction term between the unemployment rate and the FOMC[-3] at a 1% confidence level. This indicates an amplification in the sensitivity of the unemployment MAI to the unemployment rate three days before the FOMC announcement. The interaction term suggests an additional coefficient of 0.09 on top of the baseline estimate of 0.21, implying a stronger connection between labor market fundamentals and investor attention during this specific window. Supporting this, we calculate the Pearson correlation: the average correlation between unemployment MAI and the unemployment rate is around 0.41 on normal days, but increases to 0.59 three days prior to FOMC announcements. The observed pattern is visually presented in the lower panel of Figure 7, where the unemployment MAI three days before the FOMC announcements closely mirrors the contemporaneous unemployment rate. Furthermore, this distinct co-movement is uniquely observed at three days before the FOMC announcements, with no similar patterns detected in other FOMC windows, as evidenced by the analysis in columns (3) through (6) in Table 5.[15]

[15]We also repeat the same analysis for the monetary MAI. While we find a positive contemporaneous relationship between monetary MAI and the unemployment rate, the association is weaker. Specifically, a rise in the unemployment rate leads to a statistically significant, but modest increase in monetary MAI,

4.3 The Pre-FOMC UST under High Unemployment MAI

As highlighted in Lucca and Moench (2015) and Mueller et al. (2017), market uncertainty plays a central role in explaining pre-FOMC returns in equity and exchange rate markets. We investigate whether the heightened uncertainty or attention also serves as the primary channel for explaining not only the pre-FOMC SPX drift (Hu et al., 2022), but also the pre-FOMC yield decline in U.S. Treasury markets. Given the intensified co-movement between the unemployment MAI and the unemployment rate, we explore whether the unemployment MAI three days before the FOMC meetings can serve as a proxy for heightened macroeconomic uncertainty and help to explain the pre-FOMC drift in long-term yield. Fisher et al. (2022) construct the MAI by gauging the percentage of articles on a given day with content related to the macroeconomic fundamentals of interest. Their fundamental assumption posits that editorial efforts are driven by the readers' demand for different types of macroeconomic information, thereby driving the changes in attention. Moreover, investors' attention is closely related to the the macro economy and underlying market volatility which help us identify the source of the uncertainty behind the pre-FOMC drift.

Reported in Table 6 are the results of explaining the pre-FOMC UST by the unemployment MAI three days before the FOMC announcements. HMAI is a dummy variable equaling 1 if the unemployment MAI three days before the FOMC announcements is above its median value. The first column in Panel A shows that the yield change of 10-year zero-coupon treasury bond (UST10[-1]) will decrease on average additional 1.91 basis point significant at 1% level from day -2 to day -1 before the FOMC meetings when the previous unemployment MAI is high. By contrast, when the uncertainty is below median, the pre-FOMC change in 10-year yield is no longer significant. These results indicate that the pre-FOMC drift is significant only under heightened uncertainty over the labor market condition, confirming the mechanism of premium for heightened uncertainty. This pattern holds true for the one-year forward rate beginning at 9 years (FUST10[-1]), exhibiting a significant additional drop of 2.58 basis points, and for the 10-year term premium (TP10[-1]), showing a significant additional decrease of 2.14 basis points one day before the FOMC meetings when the preceding unemployment MAI is high.

When examining the impact of heightened unemployment attention on pre-FOMC short-term yield, we observe a decreasing effect from long-term to short-term yield. The HMAI

with a low R-squared of just 0.47%. More importantly, unlike the unemployment MAI, the monetary MAI does not exhibit a stronger correlation with macro fundamentals in the pre-FOMC window, except for a marginally significant coefficient on day -2. Although the monetary MAI shows a steady upward trend leading into FOMC meetings, it does not display the same heightened sensitivity to labor market conditions as the unemployment MAI. This contrast underscores the distinctive responsiveness of the unemployment MAI to macroeconomic information in the days preceding FOMC announcements.

dummy is no longer significant at explaining the yield change of 2-year zero-coupon yield (UST2[-1]) and forward rate (FUST2[-1]), while it remains significant at differentiating the 2-year term premium (TP2[-1]) changes one day before the FOMC meetings. Specifically, when the unemployment MAI three days before the FOMC meetings is high, the 2-year term premiums will decrease by additional 1.32 basis points.

To further capture the accumulation of heightened uncertainty, an important component in the model of Hu et al. (2022), we also trace the change of unemployment MAI from day -5 to -3 relative the the FOMC announcement in Panel B of Table 6. Identifying the precise timing of uncertainty buildup is inherently challenging, as it may differ substantially across announcements (Hu et al., 2022). In our empirical tests, we measure the unemployment MAI build-up (ΔUMAI) over a two-day accumulation period which is from day -5 to day -3, given that the unemployment MAI starts increasing on average from five days before the FOMC announcements. The result in Panel B shows that the build-up of the unemployment MAI can negatively predict the pre-FOMC long-term yield change. The coefficient for ΔUMAI to predict the pre-FOMC long-term yield decline is statistically significant, and the economic magnitude is large. A one-standard-deviation increase in ΔUMAI is associated with an extra pre-FOMC reduction of 0.77 basis points in 10-year yield and 0.89 basis points in the term premium component of the 10-year yield. Overall, consistent with the prediction of the two-risk model of Hu et al. (2022), increased macro uncertainties, as captured by both the level of the unemployment MAI and its change, are predictive of the pre-FOMC reduction in long-term yield. We also test the robustness of using the unemployment MAI to explain the pre-FOMC yield changes by excluding financial crisis in Table A2 and find the results are similar.

Moreover, our approach also allows us to identify the nature of the uncertainty. Contrary to unemployment MAI, the uncertainty proxied by the monetary MAI in Panel C does not have any impact on the pre-FOMC bond pricing, whether at the long end or short end. Both economically and statistically, the impact of unemployment MAI is more pronounced than that of monetary MAI, particularly in explaining pre-FOMC UST at the long end. This finding suggests that while uncertainty naturally increases in anticipation of the FOMC announcements, it is the heightened uncertainty with respect to the macro fundamentals such as the unemployment rate that drives the risk premium in long-term bonds.

We show earlier that a large fraction of the secular decline in long-term yields happens before the scheduled FOMC meetings. More importantly, we find this pre-FOMC yield decline in long-term yields is primarily associated with higher unemployment MAI. This pattern suggests an additional channel other than the conventional view that attributes the secular decline around FOMC meetings to long-run Fed guidance, as proposed by Hillenbrand (2025). If forward guidance information were the primary driver of the long-term yield

decline, sorting by previous unemployment MAI, a proxy for heightened attention, should not yield such significant differences between high- and low-MAI groups. Our pre-FOMC drift, realized prior to the FOMC announcements with heightened macro uncertainty, indicates the presence of a second channel that is important in explaining the secular decline of long-term yields.

As reported in Panel A of Table 3 that there exists a disconnection between the long- and the short-term yield change one day before the FOMC announcements. Building on this, we investigates whether this disconnection is more pronounced during periods of heightened macro uncertainty in Panel B of Table 3. We categorize FOMC meetings into high- and low-MAI groups separately based on whether the unemployment MAI three days before the FOMC announcements is above or below its median value. We then repeat the same regression setting as in Panel A. The finding in column (4) of Panel B shows a significant additional drop of 1.60 basis points, compared with normal days, in the 10-year yield before FOMC meetings with high unemployment MAI. Furthermore, the interaction term in column (6) between FF4 and FOMC[-1] is -0.44, significant at the 1% level, confirming that the divergence between long-term and short-term yield changes happening before the FOMC announcements is indeed associated with higher macro attention to the unemployment rate. This pattern vanishes for FOMC meetings associated with low unemployment MAI, as indicated in Panel C.

4.4 The Pre-FOMC Drift in Bond and Equity

4.4.1 Market-Based Uncertainty Measures for Bond and Equity

While the premium for heightened uncertainty drives the pre-FOMC drift in both bond and equity, the exact content of uncertainty may differ. Moving forward, our aim is to investigate the difference and the shared common component between pre-FOMC UST and SPX, providing a more comprehensive dynamic regarding the pre-FOMC drift in both markets. We reveal that distinct sources of uncertainty under the risk premium prior to FOMC meetings by first examining the traditional market-based uncertainty measures such as VIX index extracted from the option market. As documented in Lucca and Moench (2015) and Mueller et al. (2017), VIX index as a proxy for market uncertainty emerges as a pivotal factor in explaining the pre-FOMC return of stock and exchange rate. To test their relationship with the pre-FOMC drift, we choose the VIX index at day -3 to explain the pre-FOMC drift, similar to that of MAI index.

We compare the explanatory power of option-extracted uncertainty measures for pre-FOMC drift in bond and stock market in Table 7 by regressing the pre-FOMC drift on the lagged VIX and MOVE index. The results presented in column (1) of Table 7 reveal that

option-extracted uncertainty measures can explain the pre-FOMC drift in stock market well but not for the drift in long-term Treasury bond market, showing the different sources of uncertainty under the risk premium in pre-FOMC SPX and UST.

The VIX level is positively and statistically significantly correlated with the pre-FOMC SPX, which is well documented in Lucca and Moench (2015). A one-standard-deviation increase in the VIX level results in a significant increase of 24.01 basis points in pre-FOMC stock return with the R-squared around is 14.52%, which is huge for a predictive regression of equity returns at this high frequency. However, the VIX level fails to explain the pre-FOMC drift in the Treasury bond market. The coefficient on the pre-FOMC UST10 is estimated to be negative 0.17 basis points, which is statistically insignificant.

Interestingly, the VIX index has no predictability for the pre-FOMC drift in long-term yield, indicating that, when it comes to the pre-FOMC pricing, the risk that matters most for the equity market is not so important for the bond market. The converse is also true. While the heightened uncertainty in the bond market can be best captured by the unemployment MAI, it is unimportant in explaining the pre-FOMC drift in equity. The unemployment MAI level in column (2) of Table 7 can explain the pre-FOMC UST bot not the pre-FOMC SPX. The contrasting explanation power of option-extracted uncertainty measure versus MAI indexes unveils the different sources of the risk premium in pre-FOMC drift in stock and bond market.

In addition to the option-extracted uncertainty measures, we also find the increase of monetary MAI from day -5 to day -3 can help to explain the pre-FOMC stock return in column (3) of Panel B. Higher increase in attention to monetary policy will lead to high pre-FOMC stock return, which is similar to the result in Fisher et al. (2022) that pre-announcement monetary attention positively predicts the excess market returns on the FOMC announcement date.

4.4.2 Macro and Financial Uncertainty Indexes for Bond and Equity

In addition to examining the distinct components between pre-FOMC UST and SPX captured by the market-based uncertainty measures, we further explore the shared component between the two. To do so, we adopt the macro and financial uncertainty indexes proposed by Ludvigson et al. (2021) which differ from the option-extracted uncertainty measure in that they focus on capturing the unpredictability of the economy from the perspective of economic agents. Ludvigson et al. (2021) leverages a data-rich environment by incorporating a large set of macroeconomic and financial indicators to estimate the uncertainty as the conditional volatility of a purely unforeseeable component of future values of economic variables. The macro uncertainty is measured as a common component in the time-varying volatilities

of forecast errors across a large number of macroeconomic series such as real activity, prices, and financial conditions, while financial uncertainty is based solely on financial market data.

We match each FOMC meeting with 1-month ahead forecast of macro and financial uncertainty from the previous month, given the monthly frequency of the data, and examine their relationship with the pre-FOMC drift in the bond and stock markets, as shown in Table 7. Column (5) in Panel A and Panel B reveals that when macro uncertainty increases in the previous month, both the yield on 10-year Treasury bonds decreases significantly from day -2 to day -1 before the FOMC meeting, and the SPX index rises significantly in anticipation of the FOMC announcement. Column (4) further demonstrates that financial uncertainty outperforms macro uncertainty in explaining the pre-FOMC drift in both the bond and stock markets, as indicated by higher R-squared values, due to its focus on financial market data alone[16].

A key distinction between financial uncertainty and other uncertainty measures discussed in the previous section, such as the unemployment MAI or VIX level, is that financial uncertainty captures the common risk component underlying the pre-FOMC drift in both the bond and stock markets. The unemployment MAI can explain the pre-FOMC UST but have no predictability for the pre-FOMC SPX while the option-extracted uncertainty measures can well explain the pre-FOMC SPX but fail to predict the pre-FOMC UST. On the contrary, the financial uncertainty can capture the common component of the risk where higher financial uncertainty leads to larger pre-FOMC returns in both markets.

However, the risk premium reflected in financial uncertainty is not unique to the unemployment MAI or VIX. When controlling for the unemployment MAI, financial uncertainty loses its explanatory power for pre-FOMC UST yields, as shown in column (6) of Panel A in Table 7. Similarly, financial uncertainty loses its explanatory power for pre-FOMC SPX returns after accounting for the VIX level and ΔMAI Monetary in Panel B.

4.4.3 Predicting the Pre-FOMC SPX Using Pre-FOMC UST

Given that financial uncertainty captures the common component of risk in the pre-FOMC drift, we further examine this relationship by using the pre-FOMC drift in bonds to predict that in equities. This approach allows us to investigate the shared risk component, as the pre-FOMC drift in bonds is realized on day -1, whereas in equities, it is observed afterward, specifically, from 4 PM on day -1 to five minutes before the announcement release time. By analyzing yield movements in the U.S. Treasury market, we shed some light on the puzzling stock market movements before FOMC announcements.

[16]Financial uncertainty also explains the one-year forward rate starting at the 9-year point (FUST10[-1]), as well as the 10-year term premium (TP10[-1]), one day before the FOMC meeting.

We first regress the pre-FOMC SPX on the yield change at different maturities on day -1 in Table 8 to assess potential predictability. The results indicate that the 10-year zero coupon yield change at day -1 (UST10[-1]) can predict the following stock return before the announcement, which is significant at 5% level. Moreover, the predictability enhance when using the one-year forward rate beginning at 9-year (FUST10[-1]) and the 10-year term premium (TP10[-1]). A one-basis-point decrease in FUST10[-1] (TP10[-1]) will result in approximately 1.82 (2.43) basis points increase in pre-FOMC stock return. When putting the FUST10[-1] (TP10[-1]) and the VIX level together, the coefficient of FUST10[-1] (TP10[-1]) drops to around -1.41 (-2.15) basis points but still significant at 10% level. It shows VIX level can't drive out the additional explanatory power coming from the long-term yield decline. The predictive power of UST10[-1] and FUST10[-1] emphasizes the term premium component of the long-term yield change which is significantly negative in Table 2 and can predict the pre-FOMC SPX which is mainly driven by stock risk premium.

Given that we find the pre-FOMC change in 10-year yield is significant only when the uncertainty with respect to the labor market condition is above median, we sort the FOMC meetings into two groups in Panel B of Table 8: a high-MAI group on the left, including meetings with above-median unemployment MAI three days before the FOMC announcements, and a low-MAI group on the right, comprising the rest. The predictability of long-term yield such as UST10[-1] on pre-FOMC SPX is evident only when the previous unemployment MAI is high.

In the high-MAI group, a one-basis-point decrease in the 10-year constant maturity yield one day before the FOMC announcements leads to a 2.74 basis point increase in the pre-FOMC return in the S&P 500 index after controlling for VIX level. When examining the predictability of different component of 10-year yield on pre-FOMC SPX, we find that it's the term premium component that can predict the following return. This pattern underscores the distinctive role of the heightened uncertainty channel associated with long-term Treasury yields before FOMC meetings where the long-term bond contains larger term premium component, coming from the elevated macro fundamental uncertainty risks preceding the announcements.

In the low-MAI group, the point estimate indicates that the 10-year Treasury yield change is not significant at predicting the pre-FOMC SPX. The differential predictability of UST10[-1] on pre-FOMC SPX in the high- and low-MAI groups further underscores the uncertainty channel behind the pre-FOMC drift in long-term yield. The persistently highly positive pre-FOMC stock return is attributed to the resolution of heightened uncertainty before the announcements of the FOMC meetings (Hu et al., 2022). The observation that the yield change of long-term Treasury bonds one day before the FOMC announcements can predict the following stock return in the high-MAI sample suggests that one source of the uncertainty

comes from the heightened attention about the unemployment rate which leads to a decrease in long-term yield, and then resulting in a higher pre-FOMC stock return.

5 Conclusions

In this paper, we find positive and significant returns on long-term Treasury bonds by zooming in the day before the FOMC announcements. Unlike the pre-FOMC drift in stock market examining the 24-hour window prior to the announcements, the drift in UST market happens one day before the FOMC announcements which is from day -2 to day-1. Varying across the yield curve, we find that this significant reduction in yield is unique and robust only for long-term bonds and the magnitude of the pre-FOMC yield decline decreases as the maturity gets shorter. Over the 24-hour window that ends at the market close of the day before the FOMC announcement, the 10-year zero-coupon bond yield drops by a significant 0.79 basis points, compared with a full-sample average of -0.04 basis points. Over the same pre-FOMC window, the 2-year bond yield drops by an insignificant 0.24 basis points while the 3-month-ahead Fed fund futures rate increases by 0.33 basis points.

Our result on the pre-FOMC drift in the long term bond also completes the finding in Hillenbrand (2025) by showing that the pre-FOMC yield decline contributes importantly to the secular decline in long-term interest rates over the three-day window. Varying the event window to other days surrounding the FOMC announcements before March 2022, we find that the pre-FOMC reduction in yield is significant only over the event window of day -2 to day -1 before the FOMC announcement, while the change in yield over the announcement-day window is negative but insignificant. This observation offers insight into why prior literature find the absence of a pre-FOMC drift in the Treasury bond market. It's because they often focus solely on the FOMC announcement day. Hillenbrand (2025) attributes the forward guidance provided by the Fed's announcements as the most important driver of the long-run path of interest rates, our pre-FOMC drift, realized prior to the FOMC announcements, indicates the presence of a second channel which is important in explaining the secular decline of long-term yields.

Behind this significant positive pre-FOMC returns on UST, we find the risk premium channel that investors require compensation for bearing the risk before the announcements of the FOMC meetings. By leveraging the relative simplicity of bond versus equity risk, we are able to identify the macro and policy uncertainties that give rise to the pre-FOMC drift in long-term bonds. To proxy for macro uncertainty, we use the macro attention index (MAI) developed by Fisher et al. (2022). We establish that it's the unemployment MAI has the explanatory power for pre-FOMC long-term yield. We find that the 10-year

Treasury decreases on average additional 1.91 basis point significant at 5% confidence level from day -2 to day -1 before the FOMC meetings when the unemployment MAI at day -3 is higher than its median. Contrary to unemployment MAI, the uncertainty proxied by the monetary MAI does not have any impact on the pre-FOMC bond pricing, indicating that while uncertainty naturally increases in anticipation of the FOMC announcements, it is the heightened uncertainty with respect to the macro fundamentals such as the unemployment rate that drives the risk premium in long-term bonds.

While the pre-FOMC drift in both bond and equity is driven by the premium for heightened uncertainty, the exact content of uncertainty differs. For equities, heightened uncertainty is effectively captured by the VIX index where the R-squared of regressing the pre-FOMC SPX on lagged VIX is 14.52%. Interestingly, the VIX index has no predictability for the pre-FOMC drift in long-term yield, indicating that, when it comes to the pre-FOMC pricing, the risk that matters for the equity market is not important for the bond market. The converse is also true. While the heightened uncertainty in the bond market can be best captured by the unemployment MAI, it is unimportant in explaining the pre-FOMC drift in equity. However, we do find the shared component between the two pre-FOMC drift. When macro and financial uncertainty indexes proposed by Ludvigson et al. (2021) increases in the previous month, both the yield on 10-year Treasury bonds decreases significantly from day -2 to day -1 before the FOMC meeting, and the SPX index rises significantly in anticipation of the FOMC announcement.

Moreover, we find the resolution of uncertainty often takes place in the long term bond market first and then in the equity market. This connection between pre-FOMC UST and SPX happens only under heightened macro and policy uncertainties. For instance, when unemployment MAI is above its median, a one basis point decrease in the 10-year yield pre-FOMC predicts a three basis point increase in the S&P 500's pre-FOMC return, which remains significant after controlling for VIX level. In contrast, this predictive relationship dissipates when unemployment MAI is low, underscoring the uncertainty channel behind the pre-FOMC drift in long-term yield. Importantly, we show that the predictive power arises primarily from the term premium component, rather than from the expected short-rate.

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Table 1: Summary Statistics

Pre-FOMC: Day -1							Other						
	Obs	Mean	Std	Min	Median	Max		Obs	Mean	Std	Min	Median	Max
Panel A: Yield Change													
UST10	250	-0.79	5.20	-23.37	-0.51	15.42	UST10	7559	-0.01	5.98	-53.85	-0.17	33.11
UST5	250	-0.63	5.21	-36.85	0.01	15.11	UST5	7559	-0.02	6.01	-47.26	-0.01	32.57
UST2	250	-0.25	4.93	-45.23	0.00	23.12	UST2	7559	-0.02	5.39	-52.98	0.05	37.49
FF4	250	0.32	4.45	-20.50	0.00	36.50	FF4	7559	-0.03	3.46	-52.50	0.00	40.00
FUST10	250	-0.96	5.97	-28.74	-0.70	20.50	FUST10	7559	-0.01	6.67	-44.74	-0.22	52.35
FUST5	250	-0.95	6.15	-23.07	-0.73	19.40	FUST5	7559	-0.02	7.06	-69.55	-0.20	36.09
FUST2	250	-0.55	6.03	-46.98	-0.28	25.78	FUST2	7559	-0.03	7.01	-50.03	0.06	44.49
TP10	250	-0.71	4.77	-23.89	-0.46	14.14	TP10	7559	0.00	5.21	-41.10	-0.12	41.15
TP5	250	-0.59	3.57	-17.36	-0.59	10.69	TP5	7559	0.00	3.98	-33.06	-0.15	32.08
TP2	250	-0.33	2.99	-20.37	-0.27	8.07	TP2	7559	0.00	3.30	-42.44	-0.07	38.21
EH10	250	-0.08	3.56	-32.68	0.10	12.00	EH10	7559	-0.02	3.74	-40.75	0.05	30.41
EH5	250	-0.04	4.42	-41.31	0.16	15.69	EH5	7559	-0.02	4.54	-52.32	0.05	37.11
EH2	250	0.08	4.72	-45.44	0.15	19.92	EH2	7559	-0.02	4.51	-59.39	0.06	38.73
Panel B: Uncertainty Measures													
Pre-FOMC: Day -3							**Other**						
	Obs	Mean	Std	Min	Median	Max		Obs	Mean	Std	Min	Median	Max
MAI Urate	234	0.06	0.96	-1.22	-0.11	4.64	MAI Urate	7095	0.11	0.96	-1.22	-0.06	6.17
MAI Monetary	234	0.14	1.14	-1.83	-0.04	5.49	MAI Monetary	7095	0.17	1.32	-1.83	-0.04	10.64
VIX Index	250	19.73	8.07	9.36	17.78	79.13	VIX Index	7559	19.85	8.04	9.14	18.12	82.69
MOVE Index	250	92.43	30.16	42.48	90.09	239.40	MOVE Index	7559	91.59	28.85	36.62	89.86	264.60
Pre-FOMC: Previous Month							**Other**						
	Obs	Mean	Std	Min	Median	Max		Obs	Mean	Std	Min	Median	Max
Macro Uncertainty	246	0.66	0.12	0.53	0.62	1.24	Macro Uncertainty	124	0.66	0.12	0.53	0.62	1.21
Financial Uncertainty	246	0.92	0.18	0.63	0.93	1.50	Financial Uncertainty	124	0.93	0.19	0.63	0.93	1.55

This table reports summary statistics for pre-FOMC drift in basis point of Treasury bond market which is from day -2 to day -1 before the scheduled FOMC meetings as well as for the Non FOMC sample where we exclude the day before the FOMC meetings. UST10, UST5 and UST2 are the daily 10-,5- and 2-year Treasury zero coupon yield change and FF4 is the yield change of 3-month-ahead federal funds future contract. FUST10, FUST5 and FUST2 are the daily one-year forward rate beginning at 9- 4- and 1- year. TP10, TP5 and TP2 are 10-, 5- and 2-year term premium. We also report different uncertainty measures three days before the FOMC announcements in Panel B. MAI Urate and MAI Monetary are daily macroeconomic attention indexes for unemployment rate and monetary policy. The macro and financial uncertainty are monthly series. The sample period is September 1994 to December 2025.

Table 2: Average Daily Changes in Yield around FOMC Announcements

Panel A: Average Daily Changes in Yield

	10-Year Maturity			5-Year Maturity			2-Year Maturity			Fed Fund Future		
	UST10	TP10	EH10	UST5	TP5	EH5	UST2	TP2	EH2	FF7	FF4	FF1
FOMC[-7]	-0.25	-0.3	0.05	-0.15	-0.22	0.07	-0.19	-0.26	0.07	-0.71	-0.29	-0.06
	[-0.65]	[-1.00]	[0.21]	[-0.38]	[-0.92]	[0.24]	[-0.49]	[-1.33]	[0.24]	[-1.47]	[-1.01]	[-0.39]
FOMC[-6]	-0.31	-0.44	0.13	-0.16	-0.34	0.18	0	-0.25	0.25	0.3	0.25	-0.15
	[-1.00]	[-1.62]	[0.58]	[-0.49]	[-1.63]	[0.66]	[0.00]	[-1.40]	[0.89]	[1.01]	[0.93]	[-0.71]
FOMC[-5]	0.36	0.27	0.09	0.36	0.28	0.07	0.21	0.25	-0.04	-0.13	-0.05	0.17
	[1.05]	[0.91]	[0.47]	[1.10]	[1.24]	[0.30]	[0.74]	[1.52]	[-0.17]	[-0.54]	[-0.33]	[1.72]
FOMC[-4]	0.31	0.08	0.22	0.36	0.09	0.27	0.33	0.05	0.28	0.24	-0.05	-0.22
	[0.85]	[0.26]	[1.00]	[0.97]	[0.38]	[1.02]	[0.97]	[0.26]	[1.09]	[0.81]	[-0.25]	[-1.89]
FOMC[-3]	0.07	-0.1	0.17	0.19	-0.03	0.22	0.38	0.18	0.21	0.09	-0.17	-0.17
	[0.19]	[-0.33]	[0.79]	[0.51]	[-0.13]	[0.84]	[1.09]	[0.85]	[0.84]	[0.31]	[-0.94]	[-1.18]
FOMC[-2]	0.49	0.26	0.23	0.48	0.19	0.29	0.46	0.12	0.34	0.47	0.33	0.29
	[1.30]	[0.86]	[1.14]	[1.29]	[0.79]	[1.19]	[1.41]	[0.62]	[1.40]	[1.54]	[1.41]	[1.29]
FOMC[-1]	**-0.79**	**-0.71**	-0.08	-0.63	**-0.59**	-0.04	-0.25	-0.33	0.08	0.28	0.33	0.5
	[-2.40]	**[-2.36]**	[-0.36]	[-1.91]	**[-2.61]**	[-0.14]	[-0.80]	[-1.74]	[0.27]	[0.91]	[1.17]	[1.22]
FOMC[0]	-0.78	-0.17	-0.62	**-0.96**	-0.22	-0.75	-0.75	-0.01	-0.74	-0.6	-0.28	0.1
	[-1.82]	[-0.47]	[-1.91]	**[-2.04]**	[-0.81]	[-1.91]	[-1.79]	[-0.05]	[-1.94]	[-1.71]	[-1.01]	[0.38]
FOMC[1]	-0.53	-0.4	-0.13	-0.33	-0.12	-0.22	-0.36	0.12	-0.48	-0.55	-0.43	-0.33
	[-1.11]	[-0.85]	[-0.46]	[-0.75]	[-0.35]	[-0.63]	[-0.96]	[0.47]	[-1.38]	[-1.58]	[-1.68]	[-0.92]
All days	-0.04	-0.02	-0.02	-0.04	-0.02	-0.02	-0.03	-0.01	-0.02	-0.03	-0.02	-0.01
	[-0.59]	[-0.34]	[-0.47]	[-0.59]	[-0.45]	[-0.39]	[-0.49]	[-0.27]	[-0.39]	[-0.56]	[-0.50]	[-0.24]

Panel B: Standard Deviation of Daily Yield change

	UST10	TP10	EH10	UST5	TP5	EH5	UST2	TP2	EH2	FF7	FF4	FF1
FOMC[-7]	6.04	4.75	3.77	6.32	3.80	4.59	6.18	3.10	4.65	7.64	4.54	2.40
FOMC[-6]	4.91	4.31	3.55	5.19	3.29	4.34	4.80	2.83	4.46	4.72	4.26	3.34
FOMC[-5]	5.44	4.71	3.02	5.19	3.58	3.70	4.50	2.60	3.80	3.83	2.40	1.56
FOMC[-4]	5.77	4.78	3.47	5.85	3.72	4.18	5.37	3.10	4.06	4.69	3.16	1.84
FOMC[-3]	5.76	4.76	3.42	5.84	3.69	4.12	5.52	3.34	3.97	4.65	2.87	2.27
FOMC[-2]	5.98	4.81	3.20	5.87	3.80	3.86	5.16	3.04	3.85	4.83	3.71	3.55
FOMC[-1]	5.20	4.77	3.56	5.21	3.57	4.42	4.93	2.99	4.72	4.85	4.45	6.48
FOMC[0]	6.78	5.75	5.15	7.45	4.32	6.22	6.61	3.51	6.02	5.54	4.38	4.15
FOMC[1]	7.54	7.46	4.48	6.94	5.45	5.48	5.93	4.07	5.51	5.52	4.04	5.68
All days	5.96	5.20	3.74	5.98	3.96	4.54	5.37	3.29	4.51	4.74	3.51	3.62

Panel A reports the daily changes in basis points and Panel B reports its standard deviation of treasury yield, term premium, expected short yield and federal funds future contract around FOMC windows. FOMC[-i] denotes the i-th trading day before the scheduled FOMC announcement. UST10, UST5 and UST2 are the daily zero-coupon 10-, 5- and 2-year treasury yield change. TP10, TP5 and TP2 are 10-, 5- and 2-year term premium. EH10, EH5 and EH2 are 10-, 5- and 2-year expected short-term yield change. FF7, FF4 and FF1 are the yield change of 6-, 3-month-ahead and current month federal funds future contract. Reported in the squared brackets are the respective t-statistics. The sample period is from September 1994 to December 2025.

Table 3: The Disconnect between Long- and Short-Term Yields

Dependent: Changes in 10-Year Yield (ΔUST10)										
Sorting Variable= MAI Urate at Day -3										
Panel A: Full Sample				**Panel B: High MAI**				**Panel C: Low MAI**			
	(1)	(2)	(3)		(4)	(5)	(6)		(7)	(8)	(9)
Const	-0.01	-0.03	0	Const	-0.02	-0.05	-0.01	Const	-0.05	-0.05	-0.05
	[-0.21]	[-0.45]	[0.08]		[-0.27]	[-0.75]	[-0.22]		[-0.71]	[-0.75]	[-0.79]
FOMC[-1]	-0.77**		-0.91***	HFOMC[-1]	-1.71***		-1.84***	LFOMC[-1]	0.23		0.22
	[-2.30]		[-2.83]		[-3.41]		[-3.67]		[0.53]		[0.58]
FF4		0.62***	0.64***	FF4		0.63***	0.64***	FF4		0.63***	0.63***
		[16.26]	[16.06]			[15.07]	[15.11]			[15.07]	[14.80]
FF4*FOMC[-1]			-0.28*	FF4*HFOMC[-1]			-0.44***	FF4*LFOMC[-1]			-0.04
			[-1.94]				[-3.16]				[-0.20]
R-sqrd (%)	0.05	13.34	13.57	R-sqrd (%)	0.13	13.11	13.52	R-sqrd (%)	0	13.11	13.11
N	7809	7809	7809	N	7329	7329	7329	N	7329	7329	7329

Reported are the relationship between the change of long-term and short-term yields. The dependent variable is the daily zero-coupon 10-year treasury yield change. FOMC[-1] equals 1 if it is one day before the scheduled FOMC announcement. FF4 is the yield change of 3-month-ahead federal funds future contract. Scheduled FOMC meetings are sorted by unemployment MAI three days before the FOMC announcements, with "High" containing the above median FOMC and "Low" containing the rest. HFOMC[-1] equals 1 if it is one day before the scheduled FOMC announcement with high unemployment MAI and LFOMC[-1] equals 1 if it is one day before the scheduled FOMC announcement with low unemployment MAI. The sample period is from September 1994 to December 2023 due to the availability of MAI index. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.

Table 4: Resolution of Uncertainty around FOMC Announcement

	ΔVIX	ΔMOVE	$\Delta\text{MOVE}^{\perp}$	ΔUST10	ΔTP10
const	0.01	0.06	0.05	0.01	0.04
	[0.42]	[1.21]	[0.86]	[0.11]	[0.52]
FOMC[-7]	-0.12	-0.36	-0.13	-0.25	-0.33
	[-0.99]	[-1.35]	[-0.47]	[-0.65]	[-1.07]
FOMC[-6]	0.14	-0.39*	-0.66**	-0.32	-0.47*
	[1.30]	[-1.77]	[-2.55]	[-1.00]	[-1.68]
FOMC[-5]	-0.05	0.19	0.28	0.35	0.23
	[-0.43]	[0.68]	[0.88]	[0.98]	[0.75]
FOMC[-4]	-0.18**	0.77**	1.11***	0.28	0.04
	[-2.42]	[2.57]	[3.51]	[0.75]	[0.13]
FOMC[-3]	0.05	0	-0.1	0.05	-0.14
	[0.52]	[0.01]	[-0.38]	[0.14]	[-0.46]
FOMC[-2]	0.25***	0.35	-0.13	0.47	0.22
	[2.73]	[1.34]	[-0.47]	[1.22]	[0.70]
FOMC[-1]	0.06	-0.49*	-0.61**	-0.80**	-0.73**
	[0.50]	[-1.77]	[-2.34]	[-2.35]	[-2.36]
FOMC[0]	-0.48***	-2.56***	-1.62***	-0.79*	-0.21
	[-3.83]	[-8.50]	[-4.86]	[-1.80]	[-0.57]
FOMC[1]	0.07	0.28	0.14	-0.54	-0.44
	[0.57]	[0.91]	[0.37]	[-1.11]	[-0.93]
N	7802	7802	7802	7802	7802
R-sqrd (%)	0.39	1.35	0.69	0.19	0.13

Reported are the average changes in the VIX, MOVE, and orthogonal MOVE ($\text{MOVE}^{\perp}$) indexes around FOMC announcements, along with the corresponding changes in the SPX stock return, 10-year zero-coupon yield and the 10-year term premium. The orthogonal MOVE index is constructed by regressing the MOVE index on the VIX index and using the regression residual as the orthogonalized component. The sample period is from September 1994 to December 2025. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.

Table 5: The Relationship between Unemployment MAI and Unemployment Rate

	Dependent Variable = Unemployment MAI					
	(1)	(2)	(3)	(4)	(5)	(6)
Urate	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***
	[27.29]	[26.83]	[27.16]	[27.18]	[27.00]	[27.44]
FOMC[-3]		-0.56***				
		[-3.00]				
FOMC[-2]			0.05			
			[0.28]			
FOMC[-1]				0.18		
				[0.94]		
FOMC[0]					-0.1	
					[-0.51]	
FOMC[1]						0.53**
						[2.05]
FOMC[-3]×Unemployment		0.09***				
		[2.67]				
FOMC[-2]×Unemployment			0.03			
			[0.88]			
FOMC[-1]×Unemployment				-0.04		
				[-1.34]		
FOMC[0]×Unemployment					0.03	
					[0.92]	
FOMC[1]×Unemployment						0
						[-0.06]
Const	-1.09***	-1.07***	-1.09***	-1.09***	-1.08***	-1.10***
	[-24.93]	[-24.40]	[-24.86]	[-24.84]	[-24.70]	[-25.46]
R-sqrd (%)	15.44	15.53	15.57	15.47	15.46	16.3
N	7652	7652	7652	7652	7652	7652

This table reports the relationship between the unemployment rate and Macro Attention Index (MAI) on unemployment rate. The dependent variable is the daily unemployment MAI level. Unemployment is the contemporaneous unemployment rate level for the current month which will be released next month. FOMC[-i] equals 1 if it is the i-th trading day before the scheduled FOMC announcement. The sample period is from September 1994 to December 2023 due to the availability of MAI index. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.

Table 6: Predicting the Pre-FOMC Yield Change

	UST10[-1]	FUST10[-1]	TP10[-1]	EH10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	EH2[-1]
Panel A: $\Delta\text{Yield}_{-1} = a + b\,\text{HMAI}_{-3} + \epsilon_{-1}$								
Const	0.19	0.32	0.4	-0.22	0.15	0.08	0.35*	-0.19
	[0.42]	[0.86]	[1.45]	[-0.51]	[0.26]	[0.12]	[1.68]	[-0.33]
HMAI	-1.91***	-2.58***	-2.14***	0.23	-0.82	-1.29	-1.32***	0.5
	[-2.77]	[-3.80]	[-3.96]	[0.45]	[-1.11]	[-1.45]	[-3.61]	[0.72]
R-sqrd (%)	3.46	4.79	5.28	0.1	0.68	1.13	5.08	0.27
N	234	234	234	234	234	234	234	234
Panel B: $\Delta\text{Yield}_{-1} = \alpha + b\,(\text{UMAI}_{-3} - \text{UMAI}_{-5}) + \epsilon_{-1}$								
	UST10[-1]	FUST10[-1]	TP10[-1]	EH10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	EH2[-1]
Const	-0.70**	-0.87**	-0.59*	-0.11	-0.22	-0.5	-0.25	0.03
	[-2.13]	[-2.17]	[-1.91]	[-0.46]	[-0.67]	[-1.37]	[-1.28]	[0.10]
ΔMAI Urate	-0.77**	-1.11***	-0.89***	0.12	-0.47*	-0.76**	-0.75***	0.27
	[-2.43]	[-3.13]	[-3.30]	[0.67]	[-1.87]	[-2.26]	[-4.41]	[1.34]
R-sqrd (%)	2.29	3.66	3.69	0.11	0.92	1.64	6.65	0.33
N	234	234	234	234	234	234	234	234
Panel C: $\Delta\text{Yield}_{-1} = a + b\,\text{UMAI}_{-3} + c\,\text{MMAI}_{-3} + \epsilon_{-1}$								
	UST10[-1]	FUST10[-1]	TP10[-1]	EH10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	EH2[-1]
Const	-0.75**	-0.89**	-0.61**	-0.14	-0.29	-0.55	-0.26	-0.03
	[-2.31]	[-2.32]	[-2.04]	[-0.58]	[-0.86]	[-1.47]	[-1.37]	[-0.08]
UMAI	-1.06***	-1.61***	-1.28***	0.23	-0.33	-0.52	-0.69***	0.37
	[-3.09]	[-3.78]	[-3.62]	[0.93]	[-1.00]	[-1.37]	[-4.10]	[1.15]
MMAI	0.18	-0.06	-0.07	0.25	0.31	0.05	-0.21	0.53
	[0.56]	[-0.22]	[-0.28]	[1.11]	[0.92]	[0.13]	[-0.97]	[1.55]
R-sqrd (%)	3.77	6.83	6.92	1.06	0.79	0.65	6.18	2.29
N	234	234	234	234	234	234	234	234

Reported are the time-series regressions of pre-FOMC yield change on Macro Attention Index (MAI) about unemployment rate and monetary. UMAI (MMAI) is the unemployment (monetary) MAI level on day -3. HMAI equals to 1 if the UMAI is above its median value. ΔUMAI is the change of unemployment MAI from day -5 to day -3. UST10[-1] (UST2[-1]) is the daily 10-year (2-year) yield change from day -2 to day -1. Likewise for TP and EH which represent term premium and short-rate expected yield, respectively. FUST10 and FUST2 are the daily one-year forward rate beginning at 9- and 1- year. The sample period is from September 1994 to December 2022. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.

Table 7: Predict Pre-FOMC Drift in Bond and Stock via Uncertainty Measures

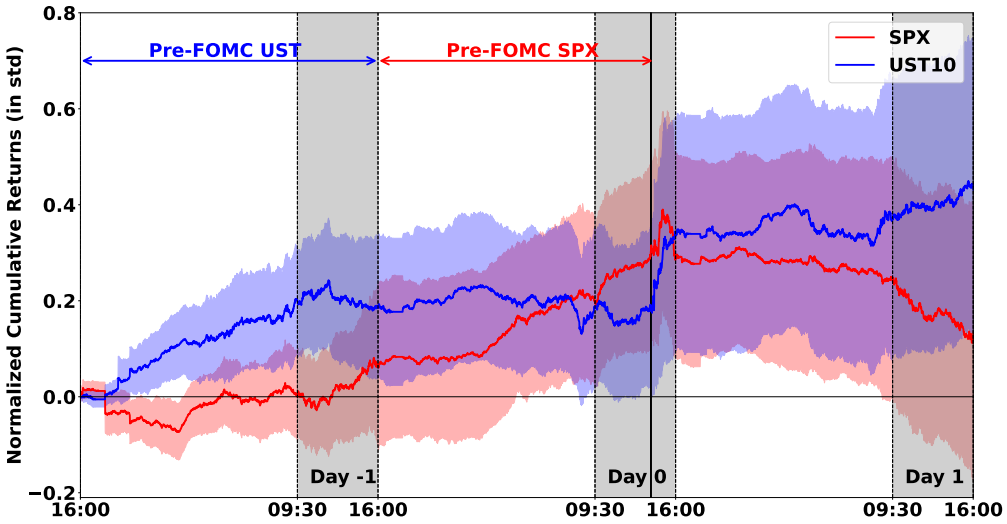
Panel A: Pre FOMC UST10						
	(1)	(2)	(3)	(4)	(5)	(6)
VIX level	-0.17					
	[-0.40]					
UMAI		-0.98***				-0.86**
		[-3.03]				[-2.40]
ΔMMAI			-0.63*			
			[-1.86]			
Financial Uncertainty				-0.64**		-0.43
				[-2.14]		[-1.29]
Macro Uncertainty					-0.52*	
					[-1.83]	
Const	-0.79**	-0.77**	-0.77**	-0.79**	-0.79**	-0.78**
	[-2.40]	[-2.43]	[-2.26]	[-2.44]	[-2.40]	[-2.47]
R-sqrd (%)	0.09	3.62	1.51	1.52	0.98	4.31
N	250	234	234	250	250	234
Panel B: Pre FOMC SPX						
	(1)	(2)	(3)	(4)	(5)	(6)
VIX level	24.01***					18.77***
	[4.75]					[3.01]
UMAI		1.35				
		[0.23]				
ΔMMAI			8.52***			9.29***
			[2.63]			[2.93]
Financial Uncertainty				20.74***		7.52
				[3.72]		[1.19]
Macro Uncertainty					19.93***	
					[3.12]	
Const	26.84***	27.58***	27.58***	26.84***	26.84***	27.19***
	[6.74]	[5.12]	[5.00]	[6.15]	[6.14]	[6.24]
R-sqrd (%)	14.52	0.05	1.81	10.84	10	17.9
N	250	234	234	250	250	234

The pre-FOMC change in 10-year yield is realized between the closes of day -2 to day -1, while the pre-FOMC return in SPX is realized between the close of day -1 to 5 min before the FOMC announcement. The option-implied VIX index is measured at the close of day -3 and standardized to zero mean and variance of one. UMAI is the unemployment MAI level on day -3, and ΔMMAI is the change of monetary MAI from day -5 to day -3. The macro uncertainty index reflects a shared component in the time-varying volatilities of h-step-ahead forecast errors across a wide range of macroeconomic series, which include variables from three categories: real activity, prices, and financial data (Ludvigson et al., 2021). The financial uncertainty is based solely on financial market data. Macro (Financial) Uncertainty is the previous month uncertainty level before the FOMC meetings with 1-month ahead forecast horizon. The sample period is from September 1994 to December 2025 except for MAI index. ***Significant at 1%, **significant at 5%, *significant at 10%. T-statistics are based on standard errors that are Newey-West (1987) adjusted with 4 lags, and are reported in brackets.

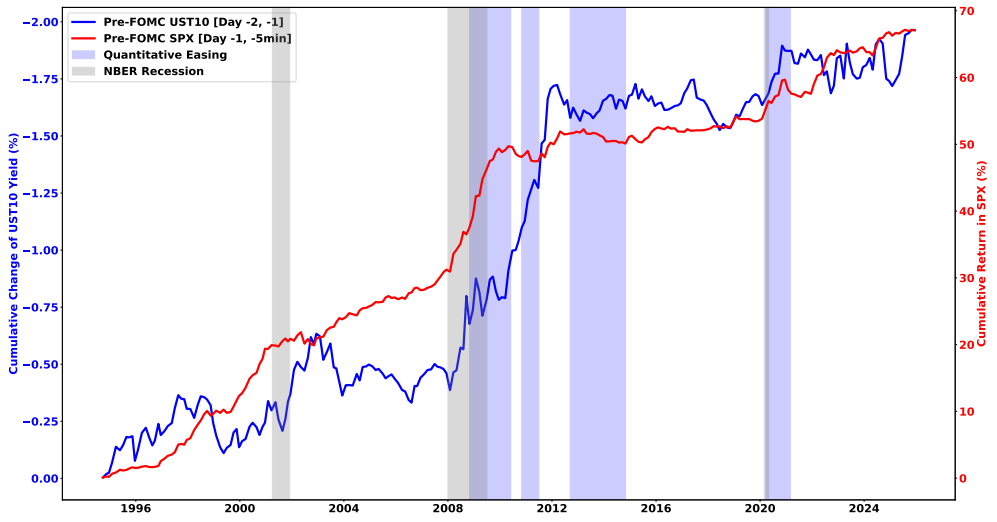
Table 8: Predicting Pre-FOMC SPX by Pre-FOMC UST

Dependent Variable = Pre-FOMC Returns in SPX (basis points)							
Panel A: Full Sample							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
const	25.48***	27.23***	25.12***	26.89***	25.08***	-31.89***	-30.96***
	[5.00]	[5.29]	[4.87]	[5.22]	[4.94]	[-3.20]	[-3.06]
UST10[-1]	-1.73**						
	[-2.12]						
FF4[-1]		-1.27					
		[-1.18]					
TP10[-1]			-2.43**			-2.15**	
			[-2.41]			[-2.32]	
EH10[-1]				0.67			
				[0.46]			
FUST10[-1]					-1.82**		-1.41**
					[-2.29]		[-2.08]
VIX level						2.90***	2.86***
						[4.88]	[4.77]
R-sqrd (%)	2.02	0.8	3.36	0.14	2.96	17.15	16.28
N	250	250	250	250	250	250	250
Panel B: Sorting by UMAI							
	High MAI FOMC Sample				**Low MAI FOMC Sample**		
	(1)	(2)	(3)		(4)	(5)	(6)
Const	-48.28***	-46.50***	-41.60***		-17.73	-17.93	-17.83
	[-3.36]	[-3.39]	[-2.68]		[-0.93]	[-0.93]	[-0.95]
UST10[-1]	-2.74***				-0.34		
	[-2.62]				[-0.35]		
TP10[-1]		-3.26***				-0.29	
		[-2.98]				[-0.27]	
EH10[-1]			1.82				-0.24
			[0.91]				[-0.16]
VIX level	3.36***	3.23***	3.27***		2.40**	2.41**	2.40**
	[4.31]	[4.26]	[3.92]		[2.04]	[2.03]	[2.08]
R-sqrd (%)	21.91	23.63	18.56		9.91	9.85	9.85
N	117	117	117		117	117	117

This table reports the results of explaining the pre-FOMC UST by pre-FOMC UST. The pre-FOMC SPX is the stock return from 4 pm on the pre-FOMC day to five minutes before the release time. UST10[-1] is the daily 10-year yield change from day -2 to day -1. FF4 is the yield change of 3-month-ahead federal funds future contract. FUST10[-1] is the daily one-year forward rate beginning at 9- year. TP10[-1] is 10-year term premium while EH10[-1] is 10-year expected short rate. Panel A is for the full sample while Panel B reports the results sorted by MAI Urate. The high MAI sample contains FOMC announcements with above median unemployment MAI three days before the announcements and the low MAI sample captures the rest. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags. The sample period is from September 1994 to December 2025.



(a) Average returns to futures on 10-Year TNote and the S&P500 Index around FOMC



(b) Time-series of the pre-FOMC drift in 10-year yield and the S&P Index

Figure 1: Pre-FOMC Drift in Bond and Equity Markets The upper figure shows the average cumulative bond and stock return on three-day windows normalized by their respective daily standard deviation. The blue line is the return of 10-year treasury future and red line is for S&P500 index. The shaded areas are pointwise 95% confidence bands around the average returns. The sample period is from January 2004 to July 2025 for Panel A. The solid vertical line is set at 2:00 pm ET. The lower figure shows time-series of cumulative pre-FOMC drift in 10-year yield over the FOMC[-1] window in blue. The pre-FOMC drift in S$P is cumulated from the close of day -1 to 5 min before the FOMC announcement. The sample period is from September 1994 to December 2025 for Panel B.

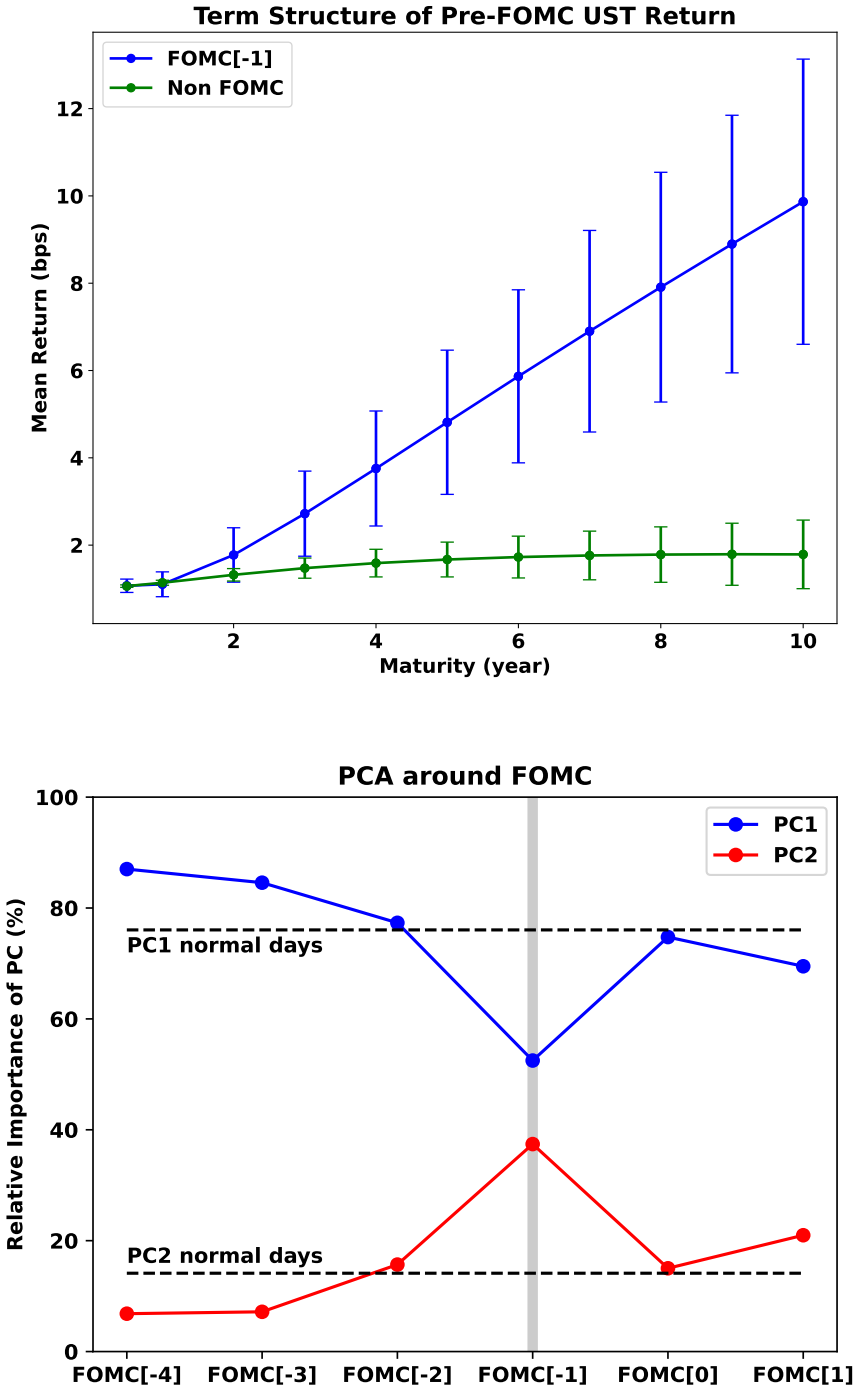


Figure 2: Term Structure of Yield Curve. Upper figure plots the term structure of Treasury in return space for normal days in green and for the day before the scheduled FOMC meetings in blue. The lower figure shows principal component analysis on the covariance matrix of yield change of 2-year, 5-year, 10-year Treasury and 1-month-ahead, 3-month-ahead Fed funds future contract. Reported are the relative importance of PC1 and PC2 around FOMC announcements. The horizontal dash line is the principal component for all trading days. The sample period is from September 1994 to December 2025.

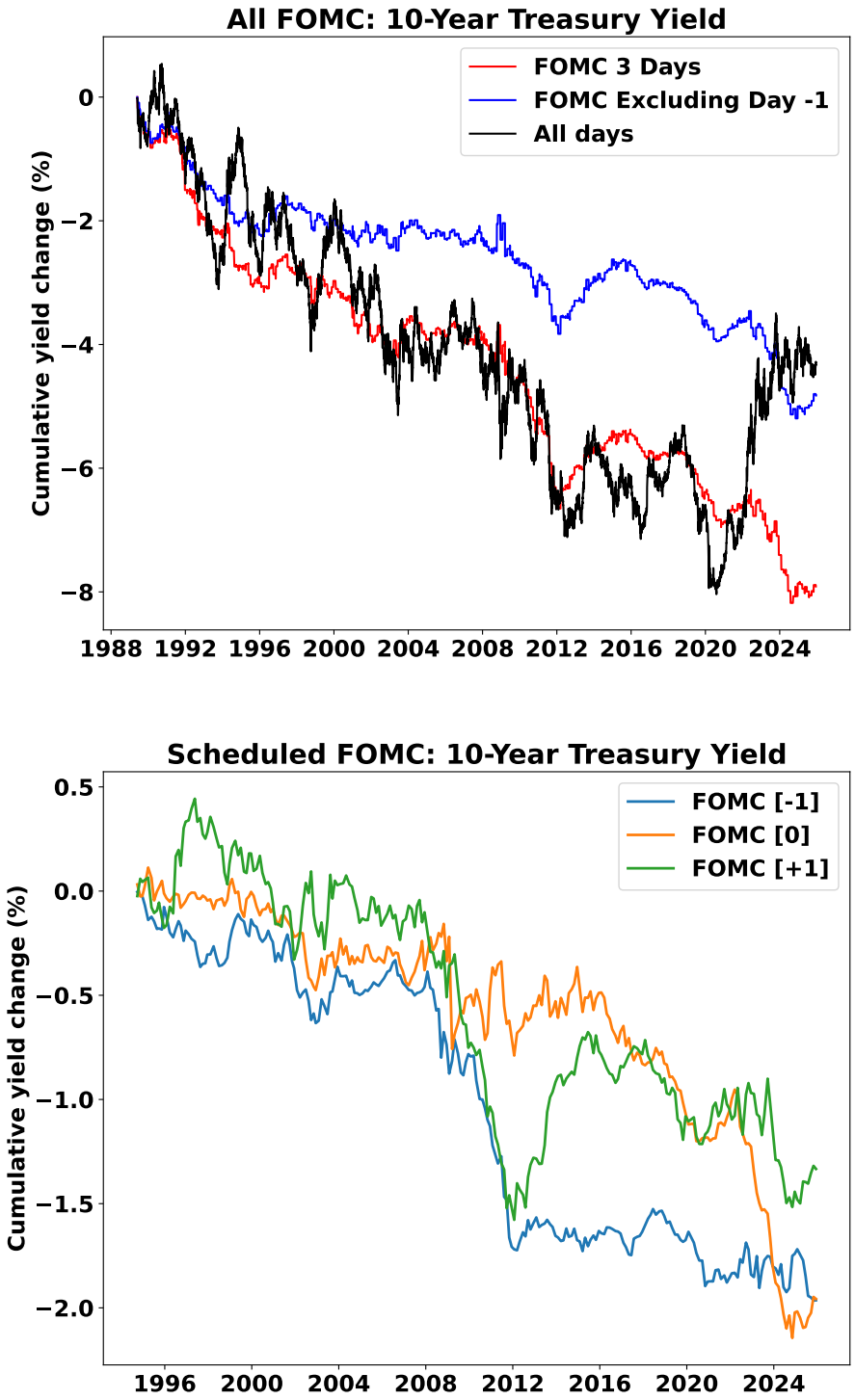
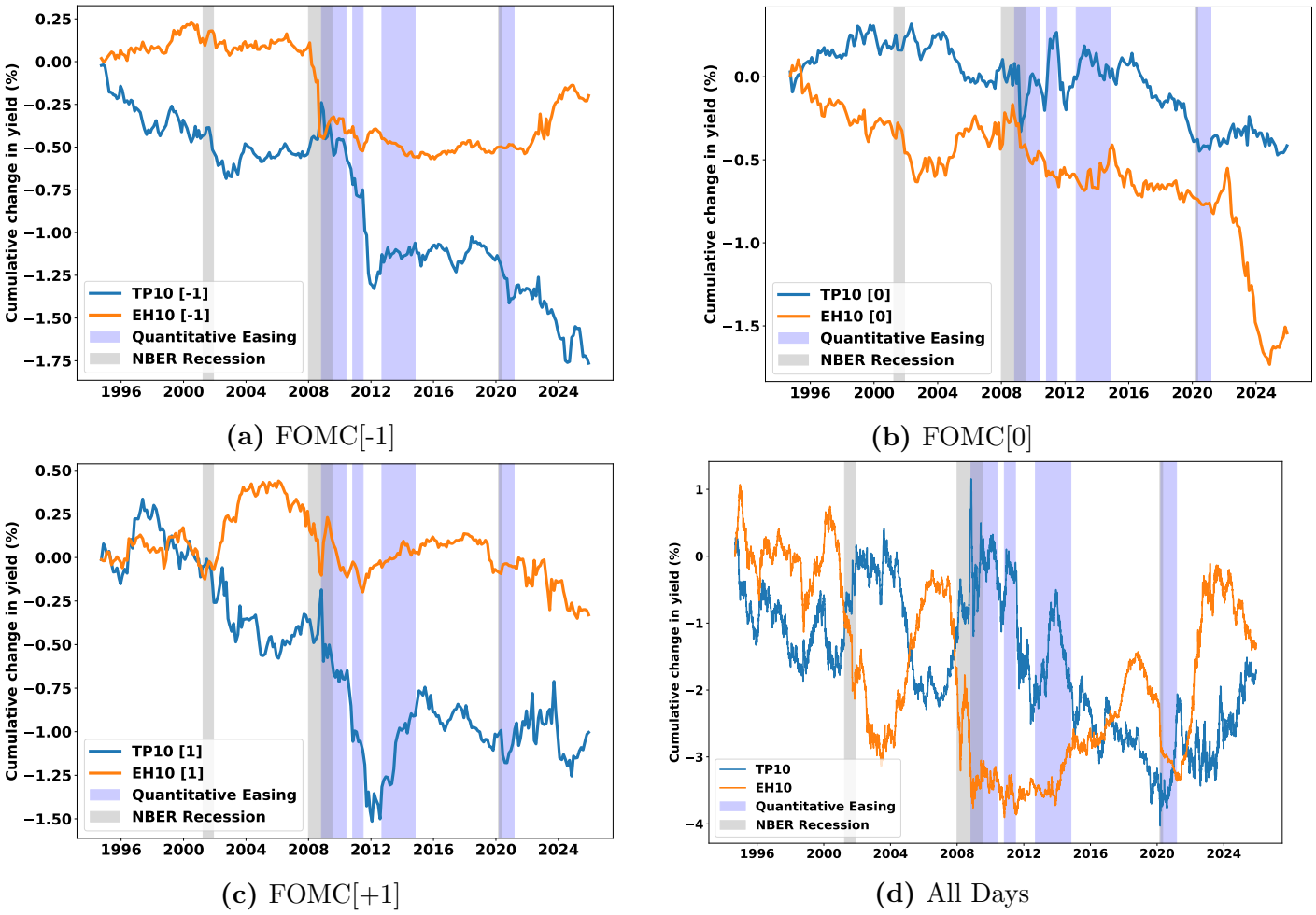


Figure 3: The Decline in Long-Term Interest Rates around FOMC Meetings. The figure documents that a 3-day window around FOMC meetings captures the secular decline of the 10-year U.S. Treasury yield. Panel A contains scheduled and unscheduled FOMC meetings while Panel B only includes scheduled FOMC meetings. This 3-day window includes, for every FOMC meeting, the day before the meeting, the FOMC day and the day after the meeting. The black gray line shows the actual evolution of the 10-year U.S. Treasury yield. The red line in the plot is the hypothetical time series of cumulating yield changes of 10-year U.S. Treasury bond over the 3-day FOMC window. The blue line is for the 2-day window excluding the pre-FOMC window. Panel B separates the 3-day window around scheduled FOMC meetings into pre-FOMC, FOMC and post-FOMC windows with different colors. The sample period is from June 1989 to December 2025 for Panel A and from September 1994 to December 2025 for Panel B.



(a) FOMC[-1]

(b) FOMC[0]

(c) FOMC[+1]

(d) All Days

Figure 4: The Yield Decomposition of 3-day FOMC Window. The figure decompose the 10-year yield change into term premium and expected short-rate components for pre-FOMC, FOMC and post-FOMC windows from Panel (a) to (c). Panel (d) plots the time-series of term premium and expected short-rate for all days from September 1994 to December 2025.

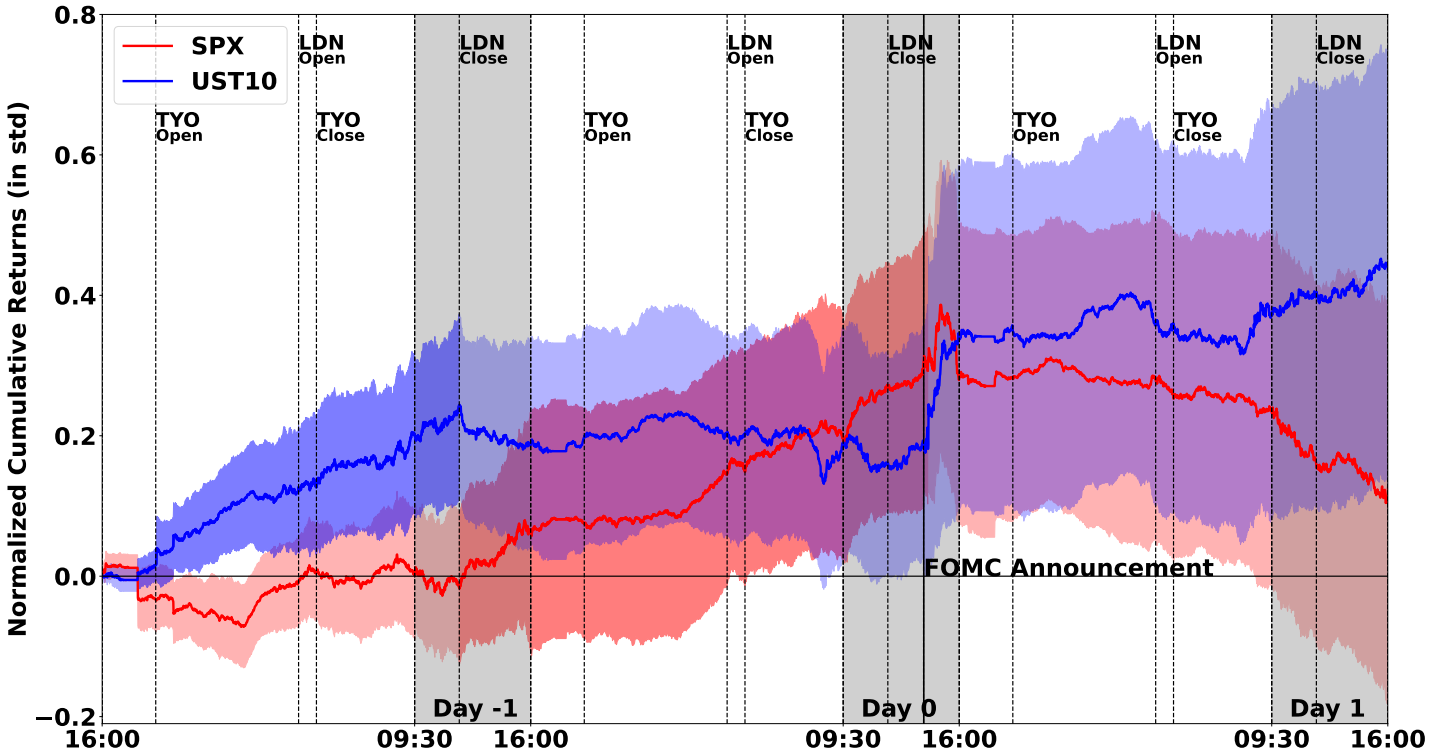


Figure 5: Pre-FOMC Drift around the Clock. The figure shows the average cumulative bond and stock return on three-day windows normalized by their respective daily standard deviation. The blue line is the return of 10-year treasury future and red line is for S&P500 index. The shaded areas are pointwise 95% confidence bands around the average returns. Tokyo markets open at 6:00 pm ET and close at 4:00 am ET while London markets open at 3:00 am ET and close at 12:00 pm ET. The sample period is from January 2004 to July 2025. The solid vertical line is set at 2:15 pm ET.

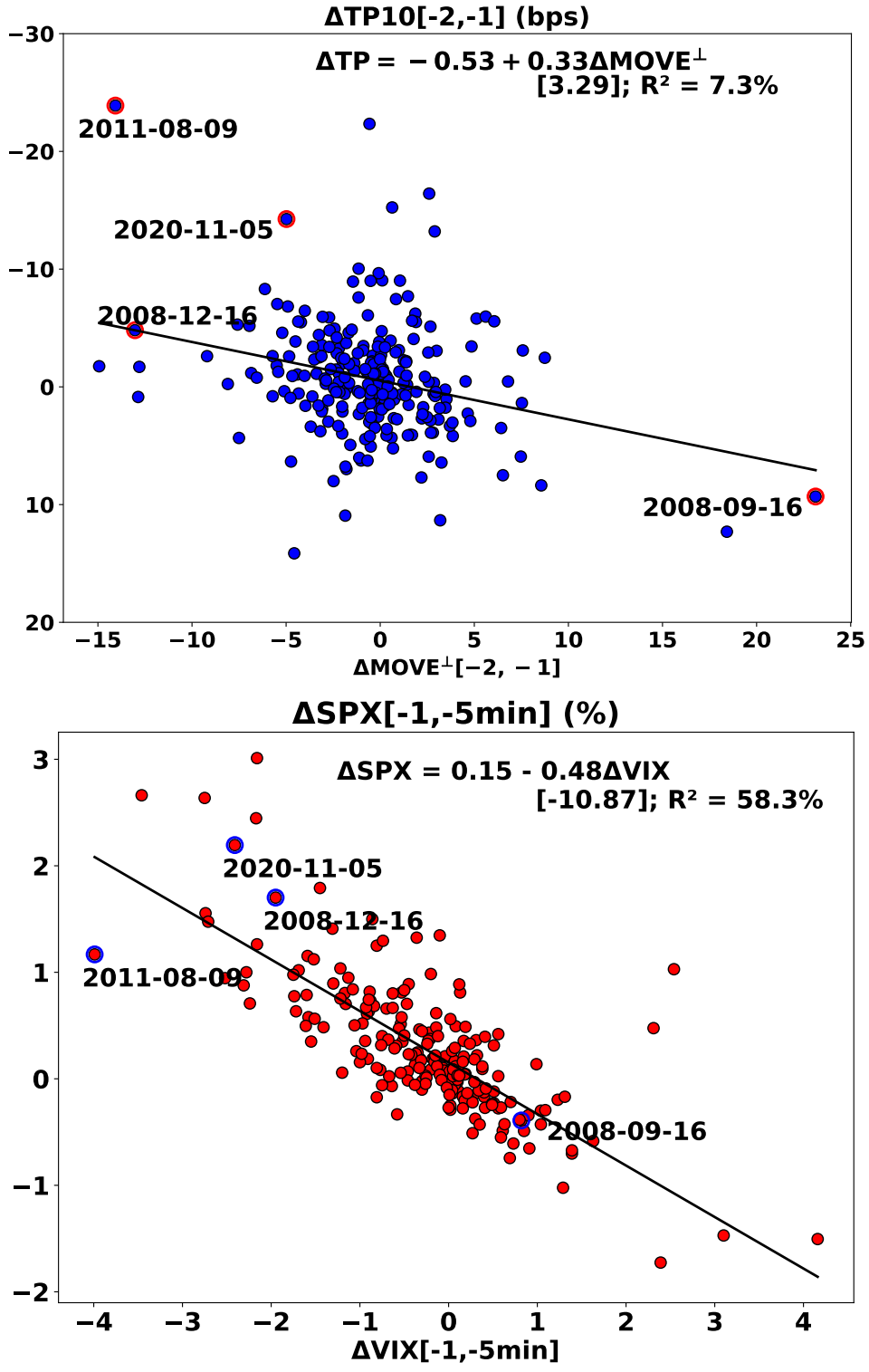


Figure 6: Uncertainty Resolution and Pre-FOMC Drift. The upper panel plots the change in the orthogonal MOVE index on day -1 on the horizontal axis and the corresponding change in the 10-year term premium on the vertical axis. The vertical axis is inverted so that reductions in yields, which imply positive returns, appear as upward movements. The lower figure plots the change in VIX index from the close of day-1 to 5 minute before the announcement at day 0 on the horizontal axis and the corresponding change in the S%P500 return on the vertical axis. The sample period is from September 1994 to December 2025 for upper figure and from September 1994 to June 2022 for lower figure.

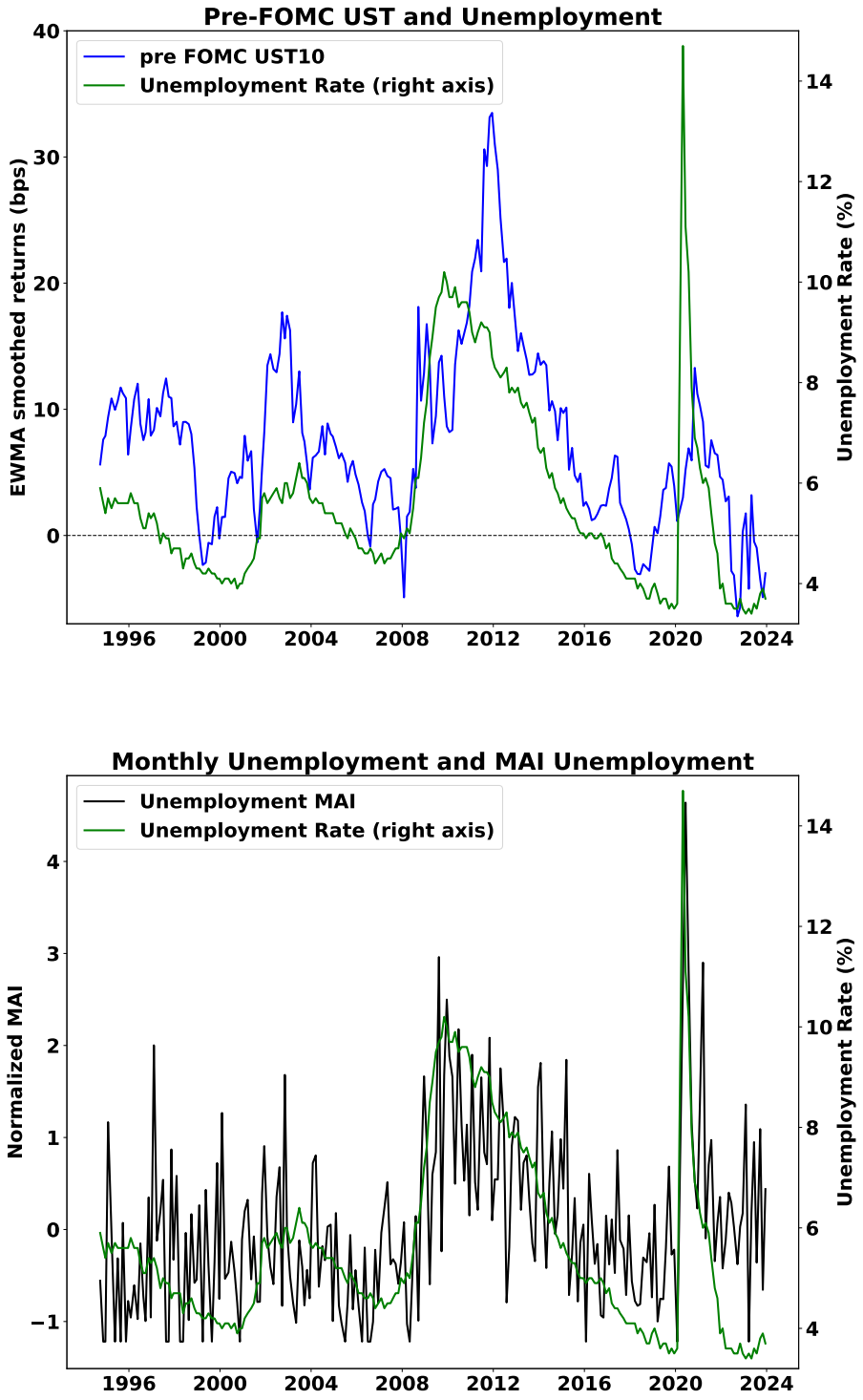


Figure 7: Time-series of MAI, Pre-FOMC Drift and Unemployment Rate. Panel A plots the unemployment rate with pre-FOMC UST10 smoothed by the EWMA method with a decay factor around 0.94. Panel B plots the unemployment MAI three days before the FOMC announcements in black and the next publicly available unemployment rate level after the FOMC meetings in green.The sample period is from September 1994 to December 2023.

A Additional Summary Statistics

Table A1: The Distribution of MAI

	Mean	Std	Skew	Kurt		Mean	Std	Skew	Kurt
MAI Urate[-7]	0.002	1.01	1.17	1.90	MAI Monetary[-7]	-0.16	0.84	0.74	0.91
MAI Urate[-6]	-0.05	0.93	0.71	0.03	MAI Monetary[-6]	-0.25	0.76	0.45	-0.25
MAI Urate[-5]	-0.13	0.93	1.16	1.60	MAI Monetary[-5]	-0.30	0.95	**3.66**	**29.38**
MAI Urate[-4]	-0.02	0.96	1.11	1.38	MAI Monetary[-4]	-0.21	0.82	1.12	2.86
MAI Urate[-3]	-0.05	0.98	**1.23**	**2.43**	MAI Monetary[-3]	0.004	0.84	0.59	0.18
MAI Urate[-2]	**0.21**	0.93	0.77	0.84	MAI Monetary[-2]	0.10	0.93	0.78	1.07
MAI Urate[-1]	-0.07	0.97	1.03	1.06	MAI Monetary[-1]	0.12	0.96	0.55	0.15
MAI Urate[0]	0.07	1.01	0.84	0.58	MAI Monetary[0]	**0.37**	1.07	0.79	0.82
MAI Urate[1]	**0.52**	1.14	0.93	2.07	MAI Monetary[1]	**1.37**	1.36	0.65	0.63

This table reports the distribution of unemployment MAI and monetary MAI around FOMC announcement. MAI Urate[-i] (MAI Monetary[-i]) is the unemployment (monetary) MAI i-th trading day before the scheduled FOMC announcement. The sample period is from September 1994 to December 2022.

We also extend our sample back to 1980 with the daily yield data in Figure 8. Following Lucca and Moench (2015), we assume that the decision in the pre-1994 sample is public one day after the FOMC meeting, defined as day 0 in the plot. After 1994, day 0 is the actual announcement day which is the second day of the two-day FOMC meetings. The blue line is the 10-year constant maturity yield from the Federal Reserve Board website and the red line is the actual transaction yield of the 10-year on-the-run Treasury from CRSP. We obtain Treasury auction data from U.S. Treasury Department and compute the on-the-run Treasury yield according to each auction.[17] The findings are consistent for both constant maturity yield and on-the-run Treasury yield, revealing a decline in the 10-year Treasury yield leading up to the FOMC announcement, specifically from day -2 to day -1. The decline in 10-year on-the-run Treasury yield also suggests that the pre-FOMC drift in Treasury market is unlikely due to any market microstructure or liquidity events.

[17]The earliest auction data is from 1980, so we start plotting yield change around FOMC from 1980 with on-the-run Treasury yield.

Table A2: The Robustness Check

Panel A: Monetary Policy Cycle							
	UST10[-1]	FUST10[-1]	TP10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	FF4[-1]
Const	-0.4	-0.82*	-0.55	0.13	-0.31	-0.36	1.18*
	[-1.03]	[-1.69]	[-1.54]	[0.44]	[-0.77]	[-0.93]	[1.70]
Dummy Easing	-0.65	-0.26	-0.16	-0.78	-0.6	0.02	-1.35*
	[-1.05]	[-0.34]	[-0.27]	[-1.41]	[-0.90]	[0.05]	[-1.82]
R2	0.39	0.05	0.03	0.65	0.27	0	2.14
N	226	226	226	226	226	226	226
Panel B: QE and QT							
	UST10[-1]	FUST10[-1]	TP10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	FF4[-1]
Const	-0.81**	-1.05**	-0.77*	-0.34	-0.68*	-0.46*	0.39
	[-2.15]	[-2.20]	[-1.94]	[-0.89]	[-1.66]	[-1.89]	[0.95]
QE1	0.08	-0.26	0.36	-0.26	-0.06	0.23	-0.7
	[0.05]	[-0.10]	[0.19]	[-0.28]	[-0.05]	[0.28]	[-1.44]
QE2	-2.09	-1.19	0.04	-1.86***	-3.00***	0.05	-0.73*
	[-1.32]	[-0.52]	[0.02]	[-2.98]	[-2.76]	[0.05]	[-1.66]
QE3	0.95	2.10**	1.83**	-0.06	0.29	1.22***	-0.58
	[1.42]	[2.30]	[2.54]	[-0.15]	[0.55]	[2.83]	[-1.36]
QT	0.3	0.28	0.32	0.54	0.77	0.72	0.14
	[0.32]	[0.30]	[0.42]	[0.64]	[0.68]	[0.94]	[0.30]
MAI Urate	-1.00**	-1.70***	-1.45***	-0.07	-0.29	-0.76***	0.37
	[-2.58]	[-3.61]	[-3.58]	[-0.22]	[-0.75]	[-4.13]	[1.48]
R2	4.42	8.17	8.29	0.61	1.33	6.91	0.58
N	226	226	226	226	226	226	226
Panel C: Excluding 2008-2009							
	UST10[-1]	FUST10[-1]	TP10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	FF4[-1]
Mean	-0.72	-0.94	-0.74	-0.11	-0.47	-0.37	0.53
	[-2.31]	[-2.47]	[-2.40]	[-0.47]	[-1.53]	[-1.89]	[1.87]
N	210	210	210	210	210	210	210
	UST10[-1]	FUST10[-1]	TP10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	FF4[-1]
Const	-0.72**	-0.94**	-0.74**	-0.11	-0.47*	-0.37*	0.53*
	[-2.30]	[-2.36]	[-2.41]	[-0.49]	[-1.71]	[-1.76]	[1.76]
MAI Urate	-1.26***	-1.61***	-1.30***	-0.48***	-0.78***	-0.68***	0.08
	[-3.97]	[-3.73]	[-3.50]	[-3.05]	[-3.56]	[-3.83]	[0.50]
R2	6.55	7.28	7.19	1.75	2.61	4.82	0.03
N	210	210	210	210	210	210	210
	UST10[-1]	FUST10[-1]	TP10[-1]	UST2[-1]	FUST2[-1]	TP2[-1]	FF4[-1]
Const	-0.67**	-0.87**	-0.68**	-0.07	-0.41	-0.31	0.51*
	[-1.98]	[-2.04]	[-2.07]	[-0.33]	[-1.50]	[-1.51]	[1.74]
ΔMAI Urate	-0.72***	-0.98***	-0.80***	-0.45**	-0.77***	-0.71***	0.25
	[-2.61]	[-2.94]	[-2.87]	[-2.11]	[-2.69]	[-3.98]	[1.63]
R2	2.47	3.08	3.12	1.76	2.89	6.05	0.36
N	210	210	210	210	210	210	210

This table reports the results of explaining the pre-FOMC UST by dummy variables for periods of monetary policy easing in Panel A. Tightening cycle is defined as the first rate hike until the Fed cuts the interest rate. Easing cycle is the rest and Dummy Easing equals 1 if the FOMC meetings fall into easing cycle. We also show the robustness check of the main result by excluding the sample period from 2008 to 2009.

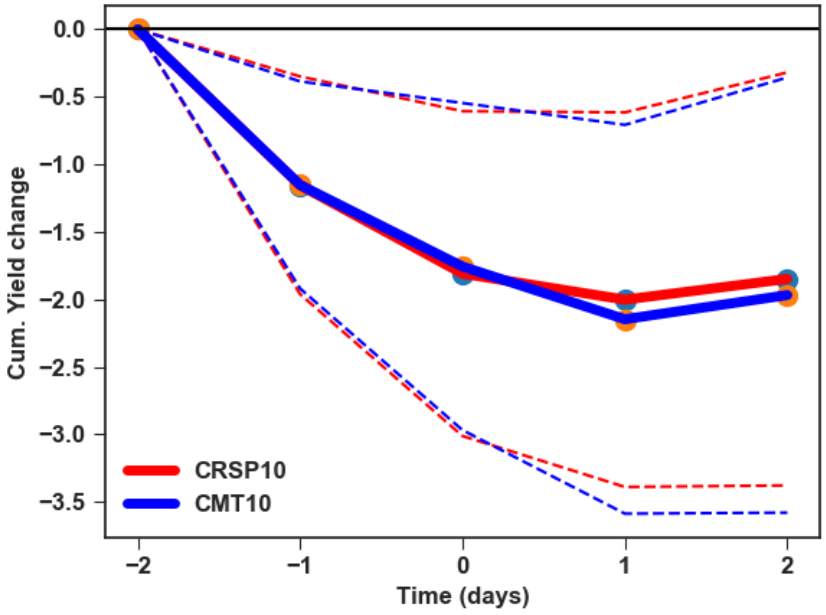


Figure 8: Daily Yeild Change around FOMC. The figure shows the average cumulative 10-year treasury yield change on three-day windows. Blue line is the 10-year constant maturity yield from Federal Reserve Board website and red line is the actual transaction yield of 10-year on-the-run Treasury from CRSP. The dash line are pointwise 95% confidence bands around the average yield change. The sample period is from January 1980 to December 2022.

B Predicting Post-FOMC UST: Information Channel

There is a co-movement between the pre-FOMC UST10 with the post-FOMC UST10 in lower Panel of Figure 3 where the post-FOMC yield follows the pre-FOMC yield closely except the period from 2012 to 2016. We examine this predictability in Table A3 by regressing the post-FOMC yield on pre-FOMC yield. In the full sample, the pre-FOMC yield change one day before the FOMC announcements can predict the post-FOMC yield one day after across the yield curve. A one-basis-point increase in UST10[-1] will result in approximately 0.28 basis points increase in UST10[1] and 0.24 basis points increase in UST2[1]. Not only the pre-FOMC long-term yield change has the predictability, but also the short-term yield change with larger coefficients. A one-basis-point increase in UST2[-1] will result in approximately 0.32 basis points increase in UST10[1] and 0.43 basis points increase in UST2[1].

We show evidence of risk premium channel when the unemployment MAI is high three days before the FOMC announcements that a one-basis-point decrease in the UST10[-1] leads to a 3.11 basis point increase in the pre-FOMC drift in the stock market. Next, we investigate more about the pre-FOMC UST when the unemployment MAI is low. Similarly, we categorized FOMC meetings into two groups in Table A3: a low-MAI group, including meetings with below-median unemployment MAI three days before the FOMC announcements, and a high-MAI group comprising the rest. The predictability of pre-FOMC yield change such as UST10[-1] on post-FOMC UST is evident only when the unemployment MAI three days before the FOMC meetings is low. In the low-MAI group, a one-basis-point increase in the UST10[-1] leads to a 0.38 (0.53) basis points increase in the UST10[1] (UST2[1]) with a R square value around 6% (14%). In contrast, the point estimate indicates that the 10-year Treasury yield change, in the univariate regression setting, is not significant at predicting the post-FOMC UST in the high-MAI group.

In contrast to the risk premium channel under high unemployment MAI, we instead find the information channel when the unemployment MAI is low where the pre-FOMC UST can actually predict post-FOMC UST. What's more interesting is that the information channel is across the whole yield curve and not limited to the long-term yield unlike the risk premium channel. It further strengthens the disconnection we documented in the paper the day before the FOMC announcements. When the unemployment MAI is high, the long-term yield is acting different from the short-term yield through the risk premium channel and is predictive for the pre-FOMC SPX. When the unemployment MAI is low, the long-term yield is aligned with the short-term yield through the information channel and is predictive for the post-FOMC UST.

The similar pattern is found when we split the sample according to whether the FOMC contains any dissenting vote and repeat the same regression setting in Table A4. The pre-

dictability of pre-FOMC UST on post-FOMC UST shows up when all FOMC members vote the same. In the non dissenting FOMC sample, a one-basis-point increase in the 10-year constant maturity yield one day before the FOMC announcements leads to a 0.39 (0.29) basis point increase in the UST10[1] (UST2[1]) with a R square value around 8.19% (6.64%). However, the pre-FOMC UST change can't explain the post-FOMC UST in the dissenting FOMC sample.

Table A3: Predicting Post-FOMC UST: Sort by MAI Urate

	Full Sample				Low MAI				High MAI			
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-0.25	-0.08	0.16	-0.2	0.42	0.31	0.16	-0.06	-1.12*	-0.79	-0.26	-0.50**
	[-0.56]	[-0.17]	[0.42]	[-0.86]	[0.76]	[0.53]	[0.30]	[-0.15]	[-1.78]	[-1.35]	[-0.61]	[-2.12]
UST10[-1]	0.28***	0.24**	0.24**	0.09	0.38***	0.45***	0.53***	0.2	0.14	0.03	-0.04	-0.02
	[3.10]	[2.58]	[2.02]	[1.20]	[2.97]	[3.60]	[2.97]	[1.32]	[1.29]	[0.24]	[-0.33]	[-0.26]
R2	3.74	2.99	3.93	1.74	6.36	8.46	13.92	4.85	1.06	0.04	0.13	0.16
N	226	226	226	226	113	113	113	113	113	113	113	113
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-0.39	-0.18	0.08	-0.22	0.42	0.31	0.16	-0.06	-1.18*	-0.71	-0.15	-0.46**
	[-0.86]	[-0.39]	[0.20]	[-0.97]	[0.74]	[0.52]	[0.31]	[-0.17]	[-1.85]	[-1.20]	[-0.35]	[-2.07]
UST2[-1]	0.32***	0.36***	0.43***	0.19**	0.30***	0.39***	0.55***	0.26***	0.34*	0.27	0.13	0.03
	[3.58]	[4.76]	[4.62]	[2.14]	[3.08]	[4.57]	[8.44]	[2.78]	[1.79]	[1.59]	[0.74]	[0.28]
R2	4.56	6.21	11.77	7.22	5.57	9.12	20.89	11.43	3.09	2.31	0.86	0.24
N	226	226	226	226	113	113	113	113	113	113	113	113

The high MAI Urate sample contains FOMC announcements with above median MAI Urate three days before the announcements and the low MAI Urate sample captures the rest. The pre-FOMC SPX is the stock return from 4 pm on the pre-FOMC day to five minutes before the release time. UST10[-2,-1] is the daily 10-year yield change from day -2 to day -1 before the FOMC. Likewise for other maturity yield and other FOMC windows. FF4 is the yield change of 3-month-ahead federal funds future contract. The sample period is from September 1994 to December 2022. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.

Table A4: Predicting Post-FOMC UST

Panel A: Sorting by FOMC Dissents								
	Agree FOMC				**Dissent FOMC**			
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-0.45	-0.32	0.26	0.04	-0.11	0.13	-0.11	-0.71
	[-0.88]	[-0.59]	[0.56]	[0.15]	[-0.13]	[0.18]	[-0.18]	[-1.41]
UST10[-1]	0.39***	0.36***	0.29**	0.15	0.07	0.02	0.12	-0.04
	[3.23]	[3.38]	[2.14]	[1.50]	[0.40]	[0.15]	[0.85]	[-0.65]
R2	8.19	7.25	6.64	5.34	0.18	0.02	0.85	0.28
N	141	141	141	141	85	85	85	85
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-0.57	-0.42	0.2	0.01	-0.07	0.24	-0.1	-0.67
	[-1.08]	[-0.75]	[0.43]	[0.05]	[-0.09]	[0.33]	[-0.17]	[-1.42]
UST2[-1]	0.31***	0.34***	0.41***	0.25***	0.38	0.44	0.50*	-0.02
	[2.82]	[3.92]	[4.19]	[2.90]	[1.47]	[1.59]	[1.96]	[-0.19]
R2	5.61	7.39	14.38	15.93	3.16	4.68	8.14	0.05
N	141	141	141	141	85	85	85	85
Panel B: Sorting by Pre-FOMC UST10								
	UST10[-1]>0				**UST10[-1]<=0**			
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-2.55*	-2.26*	-1.18	-0.39	-0.89	-0.49	0.35	0.27
	[-1.91]	[-1.81]	[-1.20]	[-0.60]	[-1.31]	[-0.71]	[0.42]	[0.43]
UST10[-1]	0.92***	0.83***	0.54*	0.08	0.1	0.11	0.24	0.18
	[2.96]	[2.68]	[1.95]	[0.52]	[0.87]	[0.77]	[0.98]	[1.03]
R2	8.82	7.39	4.3	0.35	0.37	0.46	3.1	3.77
N	91	91	91	91	135	135	135	135
	UST10[1]	UST5[1]	UST2[1]	FF4[1]	UST10[1]	UST5[1]	UST2[1]	FF4[1]
const	-0.65	-0.78	-0.6	-0.1	-0.83	-0.3	0.31	0.15
	[-0.57]	[-0.73]	[-0.82]	[-0.24]	[-1.44]	[-0.57]	[0.73]	[0.47]
UST2[-1]	0.6	0.63*	0.57*	0	0.22***	0.30***	0.43***	0.27***
	[1.60]	[1.69]	[1.98]	[-0.03]	[3.49]	[5.85]	[3.84]	[2.98]
R2	4.31	4.98	5.7	0	3.06	6.23	16.91	15.17
N	91	91	91	91	135	135	135	135

The FOMC Dissent Sample contains FOMC announcements with dissenting vote against action. UST10[-1] is the daily 10-year yield change from day -2 to day -1 before the FOMC. Likewise for other maturity yield and other FOMC windows. The sample period is from September 1994 to December 2022. ***Significant at 1%, **significant at 5%, *significant at 10%. Reported in the squared brackets are the respective t-statistics, computed using standard errors that are Newey-West (1987) adjusted with 4 lags.