Internet Appendix to *Shaping Expectations and Coordinating Attention: The Unintended Consequences of FOMC Press Conferences*

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This appendix contains supplementary material that is discussed but not tabulated in the main body of the paper. We further discuss in more details some of the results reported in this appendix.

A. List of Figures and Tables

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- Figure IA.3 shows slope coefficients from the panel regression of changes in the probability of target rate movements onto changes in the press conference indicator variable. For more details see Section F.
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- Figure IA.6 shows changes in the one- and two-year futures-implied LIBOR rate using Eurodollar futures, from one minute before the FOMC announcement to 30 minutes after the announcement. For more details on the construction of the futures-implied LIBOR rates see Section G.

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- Table IA.IV reports coefficients from regressions of the daily change in VIX, the absolute value of the Kuttner (2001) Fed Fund rate surprise, and the attention measures on FOMC announcement days on a dummy (2nd of Qtr Dum) equal to one if the FOMC announcement is the second FOMC announcement of a calendar quarter and zero otherwise, between January 1994 and March 2011. For more details see Section H.
- Table IA.V reports coefficients from regressions of meeting-to-meeting log changes in Bloomberg news count and the Google Search Volume Index on changes of an indicator variable equal to one if a meeting is followed by a press conference and zero otherwise, for interest rate announcements of the Bank of Canada and the Reserve Bank of New Zealand. For more details see Section I.

B. FOMC Transcript Excerpts on the Importance of Press Conferences

While the FOMC minutes are typically released three weeks after each meeting, actual transcripts of meetings are made public only after five years. At the time of the writing of this paper, only the transcripts meetings up to and including 2012 are available. In this appendix, we summarize and present excerpts from relevant discussions about the introduction of FOMC press conferences.[1]

The idea of holding regular PCs after FOMC announcements was first discussed in a conference call on October 15, 2010. The general opinion was favorable, with an important word of caution from Ms. Yellen: *"A press conference does have some appeal, but it would probably become obligatory on a regular basis and would be quite a commitment for the Chairman to undertake."* Only Ms. Duke (member of the Board of Governors of the Federal Reserve System) strongly opposed the idea, but would later speak in favor of it at the March 2011 meeting.

PCs were further briefly discussed at the November 2010 meeting, with the idea to be investigated further by the communication subcommittee headed by Governor Yellen. Transcripts of the subcommittee meetings are not publicly available.

Ms. Yellen reported the recommendation of the subcommittee to introduce regular PCs at the March 2011 meeting. The FOMC ultimately decided to announce PCs two weeks later, with the first one to be held following the April meeting. *"In light of those considerations, the subcommittee recommends that the Chairman conduct quarterly press conferences in the afternoon after the conclusion of each two-day FOMC meeting."* Note that before 2012, there were one-day and two-day meetings. Since 2012, all FOMC meetings are held over two days. One of the motivations other than increased transparency was that the FOMC appeared to be lagging other countries in that aspect. In the words of Chairman Bernanke, *"I think*

[1] All relevant transcripts can be found at https://www.federalreserve.gov/monetarypolicy/fomc_historical_year.htm.

the difference between the Fed and other central banks has become quite striking–every other central bank does have this method for communication."

Some members raised concerns regarding the possibility that quarterly PCs would differentiate meetings. For example, Mr. Kocherlakota felt that *"it's distinguishing the meetings in an unusual way. It's not like we only make important decisions at two-day meetings that require a lot of clarification. So if we are going to go down this path, I actually would suggest thinking about doing it every time."* Ms. Yellen's response was that *"The distinguishing feature of the two-day meetings is the economic projections and the ability that that would give the Chairman to explain our overall framework and put decisions into the context of them."* Mr. Lacker wondered what impact PCs would have on their decisions, *"whether there would be some hesitance to take actions in between press conference meetings, and I am not quite sure what the answer to that is, but I think it is worth considering."* In the end, Mr. Lacker sided in favor of PCs: *"I'd strongly support this press conference, and I think there are going to be some subtleties about it that are going to emerge in practice. I think we're going to have to resist the urge to wait to do things at just these quarterly meetings. I think when we want to do something, we're going to have to have the courage to go ahead and do it."* In the end, there was strong support for holding PCs.

There are at least three occasions at subsequent meetings in 2011 were the timing of PCs explicitly entered discussions about some decision. First, at the April 2011 meeting which would be followed by the first PC, Mr. Lockhart stated that *"I think it is possible with good communication to limit the announcement effect on the announcement of ceasing reinvestments, and I think we may be able to limit an announcement effect even with the initiation of small asset sales, but this will require skillful communication, and it seems to me that the timing would best coincide with the Chairman's press conferences so that he can explain that a rise in the fed funds rate is not necessarily imminent."*

Second, at the June 2011 meeting (PC), Mr. Lockhart stated while discussing the idea of

changing the wording of the press release that *"I think today's press conference affords the Chairman the opportunity, if you wish or if you get the question, to convey the Committee's sense of the risk context. "*

Finally, at the September 2011 meeting (non-PC), Ms. Pianalto suggested delaying action until the following meeting because of the associated PC: *"I prefer to continue to reinvest maturing agency debt and MBS into Treasuries. We told the public that we wanted to return our portfolio to a Treasury-only portfolio. If we decide that this is an appropriate way to go, I would rather wait to do this at our November meeting because that is a meeting where you will have a press conference. It will give you an opportunity to talk about the change in our reinvestment strategy."* Ultimately, the committee did not wait and adopted the measure at the September meeting, announcing Operation Twist.

The following year saw many more discussions about the timing of decisions concerning press conferences. At the March 2012 meeting (non-PC), after stating reasons for opposing to a wording change in the FOMC statement, Chairman Bernanke stated that *"The goal here is to make progress before the next two meetings – both of which happen to be meetings that are two days and have a press conference, and that are therefore much more conducive to making a more subtle determination, a more considered determination, and one that we can explain to the public. Again, for all those reasons, I think it would be premature to make that change today."*

At the August 2012 meeting (no-PC), when discussing the possibility of QE3, Ms. Duke cited the upcoming PC to favor delaying the action: *"While it may very well be the thing to do, I believe that we could execute a smoother transition if there's a little more set-up and there's a chance to discuss the action in a press conference, both of which could be accomplished in the September meeting."* Vice-Chairman Dudley also suggested that it was worth waiting for a PC: *"First, as long as we're sufficiently forward leaning, the expected action in September will be nearly as effective as the actual action at this meeting. [...] Second, as other people*

have noted, September has the advantages in terms of communication that the Chairman can explain at the press conference." In the end, QE3 was delayed until the following meeting.

Ultimately, the timing of press conferences became more important over the course of 2012. Figure IA.1 shows the count of instances of the term "press conference" in each of the transcript for the eight annual FOMC meetings of 2011 and 2012. There was much discussion about press conferences at the March 2011 meeting, when it was decided to introduce press conferences, and at the following two meetings. In the following meetings of 2011, PCs were barely mentioned, but their importance in discussions at FOMC meetings increases through 2012.

Another important question is whether the Fed should hold a press conference after each FOMC announcement. While there is no direct evidence, a quote from Mr. Lockhart at the October 2012 meeting suggests that Chairman Bernanke has been opposed to holding PCs after every meeting. While discussing a proposal to release a consensus forecast, Mr. Lockhart stated that *"If we adopt a consensus forecast approach, I do favor doing the exercise for each meeting. I don't think we can render half the meetings more equal than the other half. I think this would require a press conference after each meeting, and knowing the Chairman's view on this [laughter], that may be the final nail in the coffin."*

C. Key FOMC Announcements

June 22, 2011 (PC): the Fed announces the end of QE2.

August 9, 2011 (no PC): the Fed announces that target rates will remain at the zero lower bound for at least the subsequent two years.

September 21, 2011 (no PC): the Fed announces Operation Twist, which consists of purchasing $400 billion of Treasuries with long maturities and selling an equal amount with shorter-term maturities.

June 20, 2012 (PC): the Fed announces that it will continue Operation Twist.

September 13, 2012 (PC): the Fed announces QE3.

December 12, 2012 (PC): the Fed announces the expansion of QE3.

June 19, 2013 (PC): During the PC, Chairman Bernanke suggests a gradual moderation of the pace of bond purchases could begin in the months to come.

September 18, 2013 (PC): the Fed decides to hold off on "tapering".

December 16, 2015 (PC): the Fed increases the target rate by 25 basis points.

December 14, 2016 (PC): the Fed increases the target rate by 25 basis points.

March 15, 2017 (PC): the Fed increases the target rate by 25 basis points.

June 14, 2017 (PC): the Fed increases the target rate by 25 basis points.

D. Futures-Implied Probabilities of Rate Movements

We measure the ex-ante probabilities of target rate changes using Federal Funds futures (FF), for which we obtain settlement prices from Thomson Reuters Tick History (TRTH) as supplied by the Securities Industry Research Centre of Asia-Pacific (SIRCA). These contracts are listed for the first 36 calendar months and derive their price from the realized Federal funds overnight rate. Specifically, the settlement price is 100 minus the average daily transaction-volume-weighted Federal funds overnight rate for the delivery month. Futures prices thus reflect market expectations of the average daily Federal funds effective rate ($FFER$), which is published by the Federal Reserve Bank of New York each day.

To extract probabilities of rate movements from FF prices, we follow the methodology used by the CME Group.[2] The expected target rate change in month m is computed as

$$\mathbb{E}(\Delta r_m) = \widehat{FFER}_m - \widehat{FFER}_{m-1}, \tag{1}$$

[2]This measure of *ex-ante probability* is conceptually similar to the Kuttner (2001) measure of *announcement surprise* but requires an additional assumption of the magnitude of the potential change in rate. For more details on the construction of probabilities of rate movements, see http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html.

where $\widehat{FFER}_m$ is the futures-implied $FFER$ at the end of month m. It is important to note that these expected target rate movements can be negative even when the Federal funds target rate is at its zero lower bound. This is because rates are targeted to stay within an interval, in this case, 0 to 0.25%, rather than at a specific number, whereas the FF settlement price is based on realized market rates.

To convert expected rate changes to probabilities, we assume that target rates can only move by 0.25% at any given meeting and compute probabilities of rate changes and rate increases as

$$P(\updownarrow) = |\mathbb{E}(\Delta r_m)| \,/0.25, \tag{2}$$

$$P(\uparrow) = \max\left[\mathbb{E}(\Delta r_m), 0\right]/0.25. \tag{3}$$

The calculation of $\widehat{FFER}_m$ depends on whether there is another FOMC meeting scheduled in month $m+1$. If there is, we estimate

$$\widehat{FFER}_{m-1} = 100 - FF_{m-1} \tag{4}$$

$$\widehat{FFER}_m = \frac{1}{N-M}\left[N(100 - FF_m) - M(100 - FF_{m-1})\right] \tag{5}$$

where FF_m is the price of the future expiring in month m, N is the number of calendar days in month m, and M is the calendar day of the FOMC meeting minus 1. If there is no meeting scheduled in the following month, we instead estimate

$$\widehat{FFER}_{m-1} = \frac{1}{M}\left[N(100 - FF_m) - (N-M)(100 - FF_{m+1})\right] \tag{6}$$

$$\widehat{FFER}_m = 100 - FF_{m+1}. \tag{7}$$

E. Regressions in Levels

Some of our dependent variables are not stationary in our sample. For example, implied probabilities of interest rate changes increase from about 5% to 30%. For these variables,

taking first differences ensures that the regression residuals are stationary and identification is not driven by the trend. The direction of meeting-to-meeting changes in the dependent variable should then depend on whether the previous and the current meetings have PCs.

While we believe that it is econometrically preferable to perform the tests on differences, we also repeat the tests presented in Tables I and IV and Figure 3 using levels of probabilities or attention measures regressed on the PC indicator. The results are in Tables IA.II and IA.III and Figure IA.2. Overall, the main results hold, that is meetings with press conferences are associated with higher probabilities of interest rate movements and higher levels of attention. However, estimating the regressions in levels yields larger p-values and smaller R^2s as the PC indicator is unable to explain the trend in probabilities and attention. Rolling regressions presented in Figure 3 exhibit clearer trends for attention regressions in levels than for regressions that control for non-stationarity presented in the main text.

F. Term Structure of the Probability of Target Rate Movement

In this section, we formally test the main insights from Figure 1 in the main text. For this test, we look at meetings after June 2012, when the regular pattern of quarterly PCs was announced.[3] Using settlement prices from after the announcement on each FOMC meeting date, we infer the probability of an interest rate movement for the following 22 meetings. For each observation date, we then compute the change in the probability of an interest rate movement $\Delta P(\updownarrow)$ between each consecutive future meeting pair along with the associated ΔPC indicator. This yields a panel with 882 observations: 21 meeting pairs for each of the

[3]The regular pattern allows investors to forecast dates of future press conferences. While the calendar of FOMC meetings is released in June of the previous year, the approximate dates are generally predictable from past meetings. For this test, we assume that participants knew the true meeting dates going forward, using the actual FOMC calendar up to 2018. We supplement this with the following expected meetings dates for 2019: January 30, March 20 (PC), May 1, June 19 (PC), July 31, September 18 (PC), October 30 and December 18 (PC), and the following expected meeting dates for 2020: January 29, March 18 (PC), April 29, June 17 (PC), July 29, September 16 (PC), October 28 and December 16 (PC).

42 observation dates. We then run the following panel regression:

$$\Delta P(\updownarrow)_{t,i} = \alpha + \sum_{j=1}^{21} \beta_{\delta,j} \Delta PC_{t,i} \times \mathbb{1}_{i=j} + \varepsilon_{t,i}, \tag{8}$$

where t represents the observation date, i represents the ith pair of consecutive future meetings and $\mathbb{1}_{i=j}$ is an indicator variable equal to one if $i = j$, and zero otherwise. Regression results are presented in Figure IA.3. Blue squares indicate coefficient estimates $\beta_{\delta,j}$ while error bars indicate the 95% confidence interval from standard errors clustered by observation date and meeting pair. All 21 coefficient estimates are positive and statistically significant at the 5% level. This suggests that markets expect more important decisions on days with PCs not only for the upcoming FOMC meeting but for at least three years into the future.

We next test whether press conferences had an immediate impact, or whether the impact appeared gradually. We extend the panel regression to allow for a time-trend in the estimate:

$$\Delta P(\updownarrow)_{t,i} = \alpha + \gamma \times T_t + \sum_{j=1}^{21} \beta_{\delta,j} \Delta PC_{t,i} \times \mathbb{1}_{i=j} + \sum_{j=1}^{21} \beta_{\tau,j} \Delta PC_{t,i} \times \mathbb{1}_{i=j} \times T_t + \varepsilon_{t,i},$$

where our variables of interest $\Delta PC_{t,i}$ are interacted with a time trend variable T_t, which is set to 0 for the first observation date and increases by 1/8 for each subsequent observation date, or by one for every year.

Regression results are presented in Figure IA.4. Blue circles indicate coefficient estimates of the interaction term $\beta_{\tau,j}$ while errors bars indicate the 95% confidence interval from standard errors clustered by observation date and meeting pair. Similarly, black squares indicate coefficient estimates of $\beta_{\delta,j}$. All coefficient estimates are positive and statistically significant. This suggests that, while PCs impacted expectation of monetary policy actions from the beginning, the magnitude grew significantly over time. However, at least two factors could have contributed to this growth. First, it is possible that market participants gradually learned about the new information regime over time, leading to an increase in the differences. Second, probabilities increased in level over time, which could mechanically

increase the magnitude of the coefficients if this caused the resulting differences between PC and non-PC meetings to also increase over time. Our setup does not allow us to identify the specific channel.

G. Futures-Implied LIBOR Rates

To construct our measure of announcement surprise, we rely on Eurodollar futures, the most liquid contracts traded on the Chicago Mercantile Exchange. These derivatives react strongly to FOMC announcements and have been used as measures of announcement surprises in prior literature (e.g., Gürkaynak, Sack, and Swanson, 2005, Gertler and Karadi, 2015, Nakamura and Steinsson, 2017). Their settlement price is 100 minus the three-months spot London interbank offered rate (LIBOR) at maturity, and quarterly contracts trade with up to ten years maturity. To avoid potential biases due to maturity differences, we estimate the expected three-month LIBOR for fixed horizons by interpolation. For two consecutive contracts expiring at times t_1 and t_2, respectively, with implied LIBOR rates of r_1 and r_2, the interpolated rate at time t, $t_1 < t < t_2$, is:

$$r_t = (1 + r_1)^{\frac{t-t_1}{t_2-t_1}}(1 + r_2)^{\frac{t_2-t}{t_2-t_1}} - 1. \tag{9}$$

Figure IA.6 plots the time series distribution of the ED announcement surprise for one year (Panel A) and two years (Panel B) horizons, where full circles identify meetings followed by press conferences while hollow dots identify those without. In both series, the largest announcement surprises, in absolute value, appear to be mostly associated with PC meetings, with the notable exception in August 2011. This announcement, which occurred near the height of the Eurozone sovereign debt crisis and three days after Standard & Poor's downgraded the U.S. credit rating from AAA to AA+, stated for the first time that interest rates would stay low for at least two years. Since this is explicit information about future interest rates, ED futures reacted strongly.

H. Placebo Tests: The Pre-PC Era (1994-2011)

In this section, we analyze in the pre-PC era if there was a distinction between FOMC announcements that occurred first and second in a given calendar quarter. We first compare the changes in intraday VIX during our sample period with the changes in VIX in the 1996-2011 period. The intraday VIX data is provided by TRTH starting on January 1996.

Figure IA.5 shows cumulative changes in the VIX around the FOMC announcement, starting 2.5 hours before to 1.5 hours after the announcement. Panel A shows changes in the VIX around FOMC announcements from January 1996 to March 2011, separately for the first (dashed red line) and second (solid blue line) announcements in each calendar quarter. In short, there is no difference. Panel B shows results for our sample period and separates FOMC announcements into ones that are followed by a PC (solid blue line) and ones that are not (red dashed line). While announcements with PCs see an average drop of over 4% in the volatility index, uncertainty remains virtually unaffected around FOMC announcements without PCs.

We next report in Table IA.IV regressions of daily change in VIX (ΔVIX), absolute unexpected changes in Fed Fund rates (as in Kuttner (2001)), and our various attention indices on FOMC announcement days on a dummy, 2nd of Qtr Dum, equal to one if the FOMC announcement is the second meeting of a quarter. The sample period is January 1994 to April 2011, unless data limitations restrict the start date. We find no statistical significance associated with the dummy variable in any of the regressions. Therefore, there is no evidence to suggest that the timing of press conferences simply reflects a previously existing pattern. Instead, the separation into important and less important FOMC announcements occurs with the introduction of press conferences.

I. International Evidence

We now look at evidence from other countries as out-of-sample evidence for our findings on investor attention. Most central banks hold press conferences following each of their regular meetings, for example, the European Central Bank, the Bank of Japan, Sweden's Riksbank and Norway's Norges Bank. We are aware of only two central banks that follow a pattern similar to the one adopted by the FOMC: the Reserve Bank of New Zealand and the Bank of Canada.[4]

Since March 1999, the Reserve Bank of New Zealand holds eight regular annual meetings, and every other meeting is followed by a press conference. Our sample begins in January 2004 and ends in November 2017 and contains 110 meetings, 56 of which had PCs. The Bank of Canada follows the same pattern, but only started PCs in January 2013. Until October 2017, there were 39 meetings, 20 of which were followed by a PC.

Since not all our previous tests apply to an international setting, we repeat only the analysis using Bloomberg news intensity and Google search volume in these two countries.[5] We first obtain historical Bloomberg news intensity for announcements of both central banks considered, and the Google SVI based on searches in the respective home country from Google Trends.

Our findings are summarized in Table IA.V. Our main attention results are confirmed for both central banks considered. On days with PC, the attention in Bloomberg news coverage increases by 28% in Canada and 30% in New Zealand. Similarly, Google search intensity increases by 25% in Canada and 9% in New Zealand. The Google Trends results for New

[4]Two additional central banks hold PCs only after only some announcements. The Bank of England's Monetary Policy Committee holds monthly meetings, and issues a quarterly *Inflation Report* that is followed by a PC. However, until August 2015, the inflation report was released about one week after the monetary policy announcement. The Swiss National Bank holds quarterly meetings and semi-annual PCs.

[5]The Wall Street Journal, the New York Times, and the intraday newswires are US-based media with sparse international coverage. Also, Brusa, Savor, and Wilson (2017) show that, while FOMC decisions impact international stock markets, those markets do not react significantly to decisions of their domestic central bank. Consequently, we do not expect foreign financial markets to react as the U.S. market does.

Zealand increase dramatically in magnitude and statistical significance if we choose a starting year after the global financial crisis (2007-2008) instead of 2004. These findings suggest that the shift in attention induced by post-announcement press conferences is not unique to the FOMC but present for all central banks that have adopted similar communication patterns.

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J. Figures and Tables

Figure IA.1. Count of Instances of "Press Conference" in FOMC Trancripts

This figure shows the number of times the term "press conference" in each of the transcripts for the eight annual FOMC meetings of 2011 and 2012. Full circles identify meetings followed by press conferences while hollow dots identify those without.

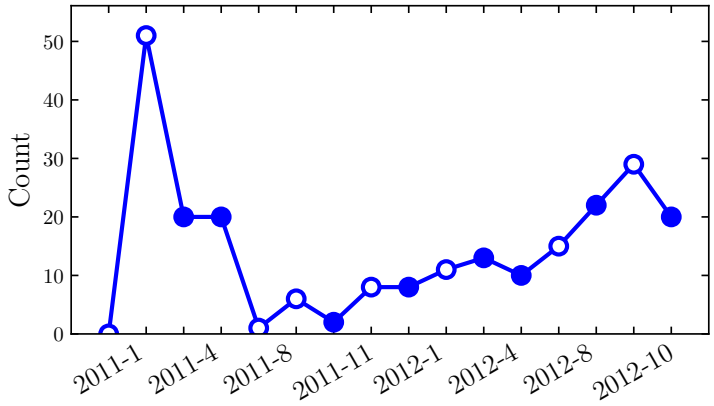

Figure IA.2. The Effect of Press Conferences over Time

This figure shows coefficients from rolling regressions over three-year windows (24 observations) of the absolute one and two year ahead Eurodollar surprises in Panels A and B, VIX log returns in Panel C, and attention measures in Panels D to H on a press conference indicator PC, equal to one if a meeting is followed by a press conference and zero otherwise and control variables. The shaded areas are pointwise 95% confidence bands computed from bootstrapped standard errors. The sample period is April 2011 to September 2017. Detailed information on the construction of measures is provided in the text.

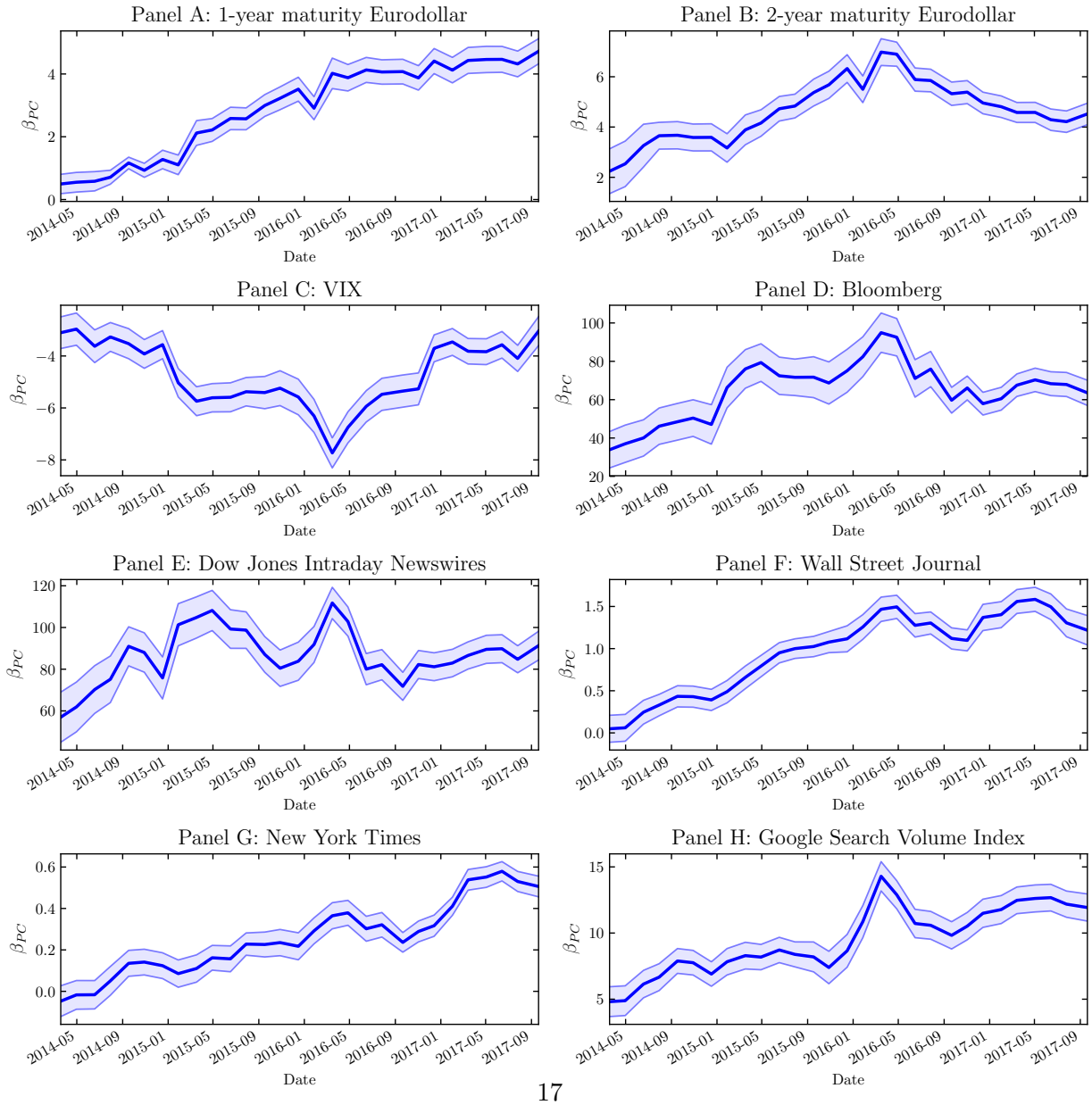

Figure IA.3. Term Structure of the Probability of Target Rate Movements and Press Conferences

This figure shows slope coefficients $\beta_{\delta,j}$ from the panel regression of changes in the probability of target rate movements, $\Delta P(\updownarrow)$, onto changes in the press conference indicator variable, ΔPC, where PC is equal to one if a meeting is followed by a press conference and zero otherwise:

$$\Delta P(\updownarrow)_{t,i} = \alpha + \sum_{j=1}^{21} \beta_{\delta,j} \Delta PC_{t,i} \times \mathbb{1}_{i=j} + \varepsilon_{t,i}.$$

i represents the ith pair of consecutive future meetings and $\mathbb{1}_{i=j}$ is an indicator variable equal to one if $i = j$, and zero otherwise. On each observation date t, corresponding to FOMC meetings from July 2012 to September 2017, the probabilities of target rate movements for the following 22 meetings are inferred from Federal Fund futures settlement prices. The dependent variable is the change in these probabilities between each consecutive future meeting pair i. Blue squares indicate coefficient estimates $\beta_{\delta,j}$ while errors bars reflect the 95% confidence interval from standard errors clustered by observation date and meeting pair. Detailed information on the construction of probability measures is provided in the text.

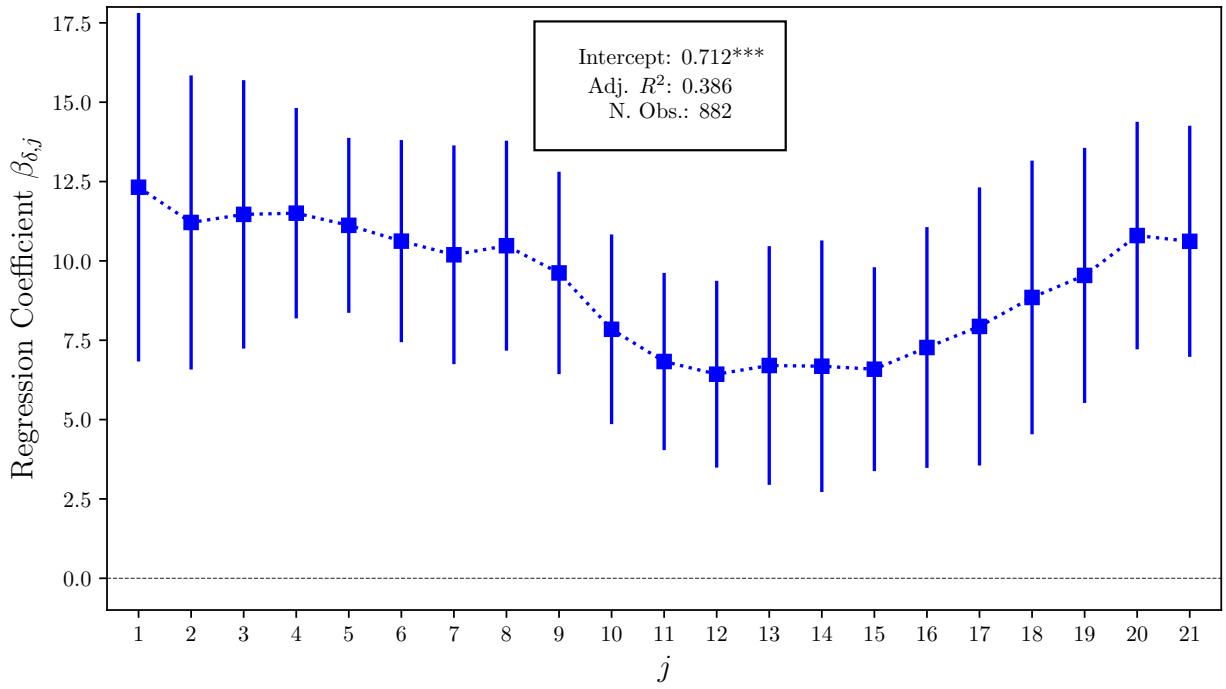

Figure IA.4. The Probability of Target Rate Movements over Time

This figure shows slope coefficients $\beta_{\delta,j}$ and $\beta_{\tau,j}$ from the panel regression of changes in the probability of target rate movements, $\Delta P(\updownarrow)$, onto changes in the press conference indicator variable ΔPC, where PC is equal to one if a meeting is followed by a press conference and zero otherwise, and a time trend interaction, $\Delta PC \times T$:

$$\Delta P(\updownarrow)_{t,i} = \alpha + \gamma \times T_t + \sum_{j=1}^{21} \beta_{\delta,j} \Delta PC_{t,i} \times \mathbb{1}_{i=j} + \sum_{j=1}^{21} \beta_{\tau,j} \Delta PC_{t,i} \times T_t \times \mathbb{1}_{i=j} + \varepsilon_{t,i}.$$

i represents the ith pair of consecutive future meetings and $\mathbb{1}_{i=j}$ is an indicator variable equal to one if $i = j$, and zero otherwise. On each observation date t, corresponding to FOMC meetings from July 2012 to September 2017, the probabilities of target rate movements for the following 22 meetings are inferred from Federal Fund futures settlement prices. The dependent variable is the change in these probabilities between each consecutive future meeting pair i. T_t is a time trend equal to 0 for the first observation date that increases by 1/8 for each observation date (one for each year). Blue circles indicate coefficient estimates $\beta_{\tau,j}$, and black squares indicate coefficient estimates $\beta_{\delta,j}$, while errors bars reflect the 95% confidence interval from standard errors clustered by observation date and meeting pair. Detailed information on the construction of probability measures is provided in the text.

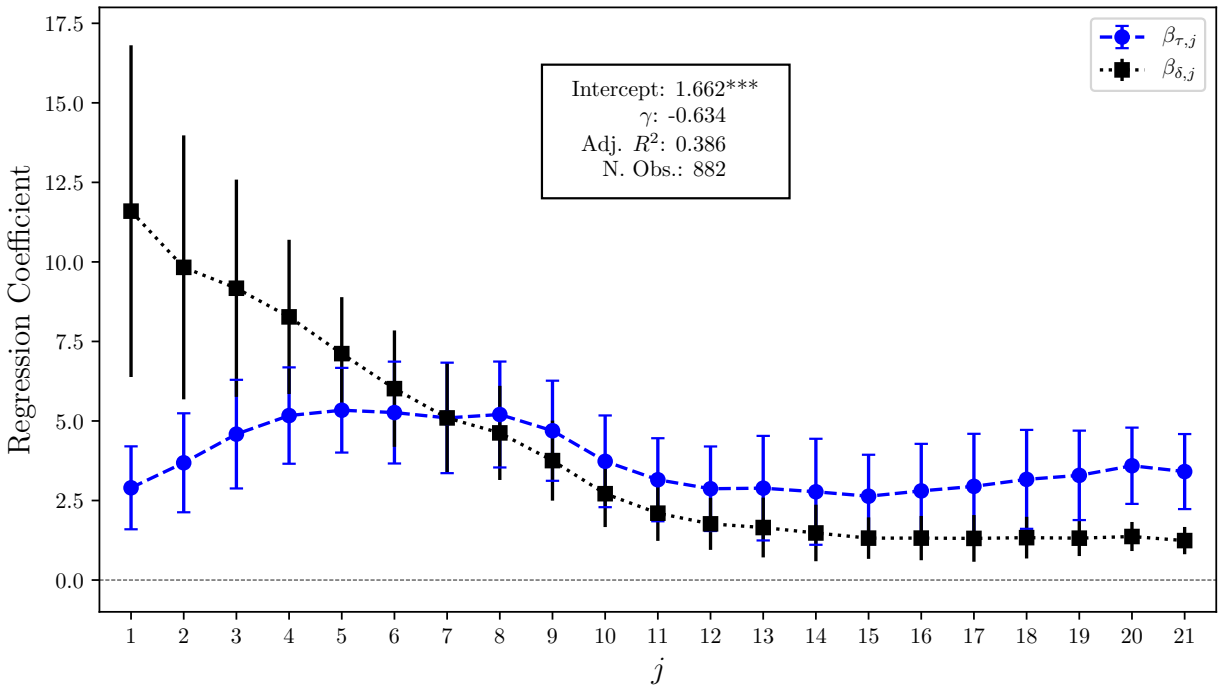

Figure IA.5. Cumulative VIX Return Around FOMC Announcements

This figure shows the average cumulative log return, in %, of VIX around FOMC announcements. Returns are normalized to zero at the time of the announcement. Panel A shows changes in the VIX around FOMC announcements from January 1996 to March 2011, separately for the first (dashed red line) and second (solid blue line) announcements in each calendar quarter. Panel B shows results for our sample period, April 2011 to September 2017, and separates FOMC announcements into ones that are followed by a PC (solid blue line) and ones that are not (red dashed line). The shaded areas are pointwise 95% confidence bands around the average returns.

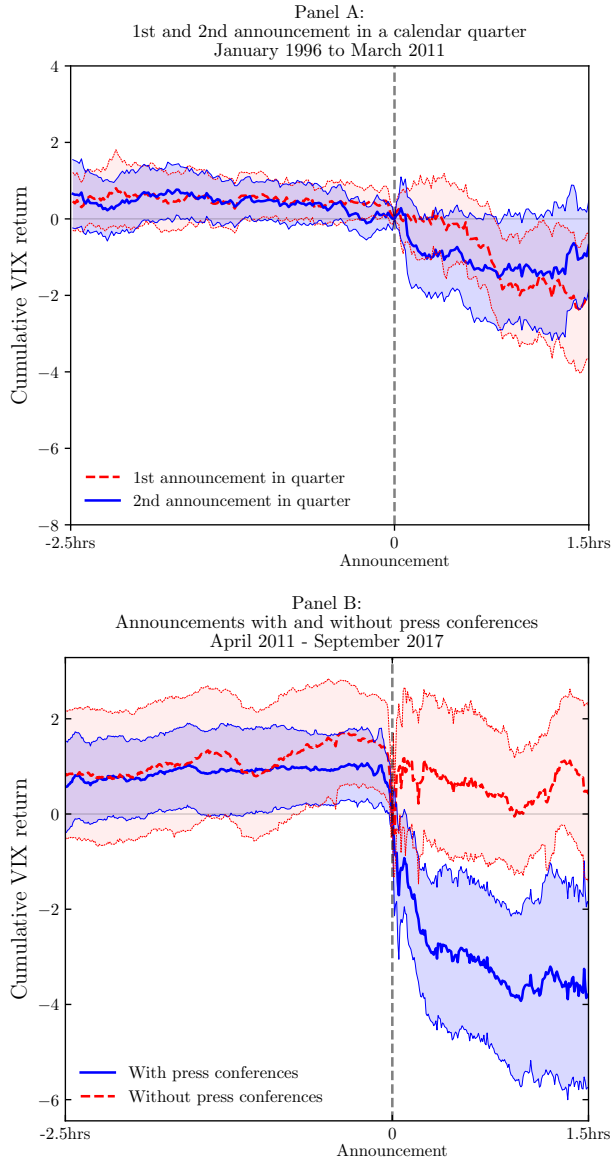

Figure IA.6. Eurodollar Rate Changes Around FOMC Announcements

This figure shows the changes in the one year in Panel A and two years futures-implied LIBOR rate using Eurodollar futures, from one minute before the FOMC announcement to 30 minutes after the announcement, in Panel B. Full circles identify meetings followed by press conferences while hollow dots identify those without. The sample period is April 2011 to September 2017. Detailed information on the construction of measures is provided in the text.

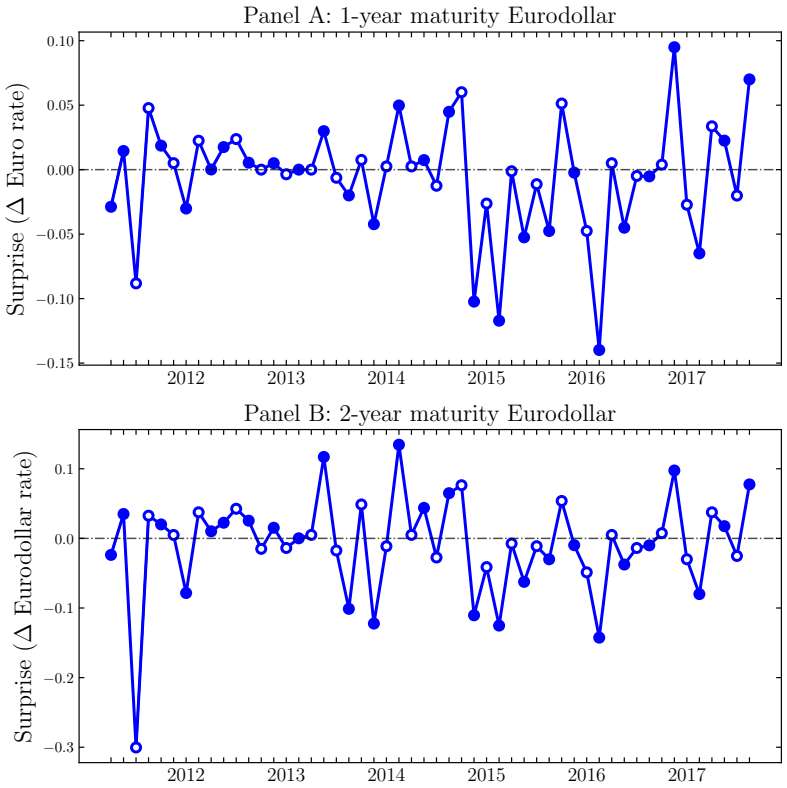

Table IA.I
FOMC Announcement Calendar

This table reports the scheduled and actual time of FOMC announcements and the scheduled time for press conferences (PCs) between April 2011 and September 2017.
Source: http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm and TRTH.

Date	Scheduled	Actual	PC	Date	Scheduled	Actual	PC
04/27/2011	12:30	12:32	14:15	07/30/2014	14:00	14:00	
06/22/2011	12:30	12:27	14:15	09/17/2014	14:00	14:00	14:30
08/09/2011	14:15	14:18		10/29/2014	14:00	14:00	
09/21/2011	14:15	14:23		12/17/2014	14:00	14:00	14:30
11/02/2011	12:30	12:32	14:15	01/28/2015	14:00	14:00	
12/13/2011	14:15	14:12		03/18/2015	14:00	14:00	14:30
01/25/2012	12:30	12:27	14:15	04/29/2015	14:00	14:00	
03/13/2012	14:15	14:15		06/17/2015	14:00	14:00	14:30
04/25/2012	12:30	12:32	14:15	07/29/2015	14:00	14:00	
06/20/2012	12:30	12:32	14:15	09/17/2015	14:00	14:00	14:30
08/01/2012	14:15	14:13		10/28/2015	14:00	14:00	
09/13/2012	12:30	12:31	14:15	12/16/2015	14:00	14:00	14:30
10/24/2012	14:15	14:15		01/27/2016	14:00	14:00	
12/12/2012	12:30	12:30	14:15	03/16/2016	14:00	14:00	14:30
01/30/2013	14:15	14:15		04/27/2016	14:00	14:00	
03/20/2013	14:00	14:00	14:30	06/15/2016	14:00	14:00	14:30
05/01/2013	14:00	14:00		07/27/2016	14:00	14:00	
06/19/2013	14:00	14:00	14:30	09/21/2016	14:00	14:00	14:30
07/31/2013	14:00	14:00		10/28/2016	14:00	14:00	
09/18/2013	14:00	14:00	14:30	12/16/2016	14:00	14:00	14:30
10/30/2013	14:00	14:00		02/01/2017	14:00	14:00	
12/18/2013	14:00	14:00	14:30	03/15/2017	14:00	14:00	14:30
01/29/2014	14:00	14:00		05/03/2017	14:00	14:00	
03/19/2014	14:00	14:00	14:30	06/14/2017	14:00	14:00	14:30
04/30/2014	14:00	14:00		07/26/2017	14:00	14:00	
06/18/2014	14:00	14:00	14:30	09/20/2017	14:00	14:00	14:30

Table IA.II
Probability of Interest Rate Movements Before FOMC Announcements

This table reports coefficients from regressions of the probability of interest rate movements, in %, on PC, an indicator variable equal to one if a meeting is followed by a press conference and zero otherwise, and control variables. Probabilities of movements, $P(\updownarrow)$, or increases, $P(\uparrow)$, in Federal funds rates are derived from Federal Funds Futures as measured one day prior to each FOMC meeting. ΔCPI, ΔUE, and ΔGDP are log changes in, respectively, the consumer price index, the unemployment rate, and the gross domestic product. $R_{\text{S\&P}}$ is the S&P 500 log return over the 21-day interval ending three days before the announcement. Asymptotic heteroscedasticity robust and bootstrapped standard errors are presented in parenthesis and square brackets, respectively, and bootstrapped p-values in italics. Adjusted R^2 and the number of observations N are also reported. The sample period is April 2011 to September 2017. Detailed information on the construction of measures is provided in the text.

	$P(\updownarrow)$			$P(\uparrow)$		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	4.229	1.092	1.451	2.747	-0.752	-0.314
	(0.59)	(3.86)	(4.45)	(0.61)	(3.84)	(4.44)
	[4.42]	[6.47]	[6.56]	[4.49]	[6.58]	[6.67]
	0.34	*0.93*	*0.88*	*0.59*	*0.85*	*0.90*
PC	14.157	12.786	12.912	14.388	12.933	13.086
	(5.90)	(5.22)	(5.15)	(6.00)	(5.32)	(5.25)
	[6.13]	[6.14]	[6.15]	[6.23]	[6.25]	[6.25]
	0.02	*0.04*	*0.04*	*0.02*	*0.04*	*0.04*
ΔCPI		16.928	17.249		17.518	17.908
		(13.44)	(13.20)		(13.66)	(13.41)
		[13.79]	[13.81]		[14.02]	[14.04]
		0.22	*0.21*		*0.21*	*0.20*
ΔUE		-10.534	-9.152		-7.839	-6.155
		(18.90)	(21.34)		(18.89)	(21.38)
		[23.95]	[24.35]		[24.37]	[24.75]
		0.66	*0.71*		*0.75*	*0.81*
ΔGDP		0.442	0.395		0.692	0.634
		(1.63)	(1.66)		(1.63)	(1.66)
		[2.35]	[2.35]		[2.39]	[2.39]
		0.84	*0.85*		*0.76*	*0.77*
$R_{\text{S\&P}}$			-0.256			-0.312
			(0.72)			(0.73)
			[0.82]			[0.84]
			0.74			*0.69*
Adjusted R^2	0.075	0.048	0.029	0.075	0.048	0.030
N	52	52	52	52	52	52

Table IA.III
Attention Before FOMC Announcements

This table reports coefficients from regressions of measures of attention on PC, an indicator variable equal to one if a meeting is followed by a press conference and zero otherwise, and control variables. The measures of media attention are based on articles published on the Bloomberg terminal platform (BB), the Dow Jones intraday newswires (INW), or printed in the Wall Street Journal (WSJ), and the New York Times (NYT). The weekly Search Volume Index (SVI) is obtained from Google Trends for searches for "FOMC" and related terms. ΔCPI, ΔUE, and ΔGDP are log changes in, respectively, the consumer price index, the unemployment rate, and the gross domestic product. $R_{\text{S\&P}}$ is the S&P 500 log return, over the 21-day interval ending three days before the announcement. Asymptotic heteroscedasticity robust and bootstrapped standard errors are presented in parenthesis and square brackets, respectively, and bootstrapped p-values in italics. Adjusted R^2 and the number of observations N are also reported. The sample period is April 2011 to September 2017. Detailed information on the construction of measures is provided in the text.

	Panel A: BB			Panel B: INW			Panel C: WSJ			Panel D: NYT			Panel E: SVI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Intercept	139.467	137.097	143.121	111.240	104.765	107.545	2.672	2.519	2.683	0.953	0.950	0.979	13.520	11.263	12.353
	(8.77)	(12.72)	(11.80)	(11.44)	(15.64)	(15.33)	(0.18)	(0.30)	(0.29)	(0.08)	(0.11)	(0.11)	(0.99)	(1.66)	(1.47)
	[11.21]	[16.56]	[16.13]	[12.37]	[17.80]	[17.96]	[0.22]	[0.33]	[0.31]	[0.08]	[0.12]	[0.12]	[1.53]	[2.17]	[2.03]
	0.00	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
PC	48.311	49.796	51.899	72.538	76.544	77.515	0.589	0.543	0.601	0.214	0.222	0.233	7.912	8.231	8.612
	(15.32)	(15.53)	(15.22)	(17.06)	(17.71)	(17.70)	(0.30)	(0.30)	(0.27)	(0.11)	(0.11)	(0.11)	(2.08)	(2.01)	(1.91)
	[15.55]	[15.74]	[15.13]	[17.15]	[16.92]	[16.83]	[0.31]	[0.31]	[0.29]	[0.11]	[0.11]	[0.11]	[2.12]	[2.06]	[1.90]
	0.00	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.06*	*0.08*	*0.04*	*0.06*	*0.05*	*0.04*	*0.00*	*0.00*	*0.00*
ΔCPI		-21.835	-16.459		-56.312	-53.831		0.467	0.613		-0.083	-0.056		-5.455	-4.482
		(28.01)	(27.63)		(36.37)	(36.59)		(0.49)	(0.46)		(0.25)	(0.25)		(3.57)	(3.32)
		[35.33]	[34.00]		[37.97]	[37.79]		[0.70]	[0.65]		[0.25]	[0.25]		[4.63]	[4.27]
		0.54	*0.63*		*0.13*	*0.15*		*0.49*	*0.34*		*0.76*	*0.83*		*0.23*	*0.29*
ΔUE		13.864	37.055		11.743	22.446		0.294	0.925		-0.225	-0.113		0.790	4.985
		(51.88)	(54.66)		(53.19)	(55.49)		(0.93)	(0.99)		(0.38)	(0.37)		(5.58)	(5.90)
		[61.35]	[59.85]		[65.88]	[66.50]		[1.21]	[1.14]		[0.44]	[0.44]		[8.04]	[7.53]
		0.82	*0.53*		*0.85*	*0.73*		*0.80*	*0.41*		*0.61*	*0.80*		*0.92*	*0.51*
ΔGDP		2.710	1.923		6.339	5.976		0.066	0.045		-0.003	-0.006		1.433	1.290
		(5.11)	(4.92)		(5.19)	(5.11)		(0.08)	(0.08)		(0.04)	(0.04)		(0.67)	(0.59)
		[6.03]	[5.79]		[6.48]	[6.45]		[0.12]	[0.11]		[0.04]	[0.04]		[0.79]	[0.73]
		0.65	*0.74*		*0.33*	*0.35*		*0.57*	*0.68*		*0.95*	*0.88*		*0.07*	*0.08*
$R_{\text{S\&P}}$			-4.299			-1.984			-0.117			-0.021			-0.778
			(1.78)			(1.95)			(0.05)			(0.01)			(0.32)
			[2.03]			[2.25]			[0.04]			[0.01]			[0.25]
			0.03			*0.38*			*0.00*			*0.16*			*0.00*
Adjusted R^2	0.140	0.096	0.150	0.241	0.244	0.239	0.047	-0.000	0.132	0.047	-0.006	0.009	0.195	0.223	0.327
N	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52

Table IA.IV
Placebo Analysis

This table reports coefficients from regressions of the daily change in VIX, the absolute value of the Kuttner (2001) Fed Fund rate surprise, and our attention measures on FOMC announcement days on a dummy (2nd of Qtr Dum) equal to one if the FOMC announcement is the second FOMC announcement of a calendar quarter, zero otherwise. Detailed information on the attention measures are provided in Section III in the main text. Robust (White) standard errors are in parentheses. The sample in is from January 1994 to March 2011.

	ΔVIX	|Kuttner|	ΔNYT	ΔWSJ	ΔBB	ΔINW	ΔSVI
Intercept	-0.025***	0.027***	-0.090	0.548	0.104	0.028	-0.026
	(0.007)	(0.005)	(0.083)	(0.913)	(0.201)	(0.090)	(0.067)
2nd of Qtr Dum	-0.002	-0.003	0.170	-1.085	-0.065	-0.074	0.027
	(0.011)	(0.007)	(0.122)	(1.274)	(0.234)	(0.137)	(0.098)
N	138	137	137	137	48	89	57
Adjusted-R^2	-0.01	-0.01	0.01	-0.00	-0.02	-0.01	-0.02

Table IA.V
Attention Before Announcements in Canada and New Zealand

This table reports coefficients from regressions of meeting-to-meeting log changes in Bloomberg news count (BB) and the Google Search Volume Index (SVI), in %, on changes ΔPC of an indicator variable, PC, equal to one if a meeting is followed by a press conference and zero otherwise, for interest rate announcements of the Bank of Canada and the Reserve Bank of New Zealand. Asymptotic heteroscedasticity robust and bootstrapped standard errors are presented in parenthesis and square brackets, respectively, and bootstrapped p-values in italics. Adjusted R^2 and the number of observations N are also reported. The sample period is January 2013 to October 2017 for Canada and January 2004 to November 2017 for New Zealand. Detailed information on Bloomberg news and the SVI is provided in Section III in the main text.

	Canada		New Zealand	
	ΔBB	ΔSVI	ΔBB	ΔSVI
	(1)	(2)	(3)	(4)
Intercept	0.044	0.822	1.409	-0.501
	(7.99)	(6.36)	(2.97)	(4.96)
	[7.99]	[6.36]	[2.96]	[4.95]
	0.99	*0.91*	*0.63*	*0.92*
ΔPC	27.934	25.309	30.006	9.023
	(7.99)	(6.36)	(3.02)	(5.05)
	[7.99]	[6.36]	[2.99]	[5.00]
	0.00	*0.00*	*0.00*	*0.07*
Adjusted R^2	0.222	0.274	0.475	0.020
N	38	38	109	109