Big News for Little People?
The Effects of Central Bank Communication on Consumers

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Motivation

- Ample empirical support that announcements of central banks affect financial markets (interest rates, exchange rates, stock prices) and financial markets participants (professional forecasters).

- Scarce evidence regarding consumers
  - Households account for the largest expenditure component of GDP, so influencing their expectations should be particularly important.
  - Expectations of market professionals and consumers may significantly differ
    - Coibion et al. (2018) managers report higher expected inflation than professional forecasters; information on monetary policy changes investment behavior
    - Allcott (2011) U.S. consumers overestimate future energy prices as compared to expectations derived from traded futures contracts.

- "... time to pay more attention to communication with the general public" (Blinder et al., 2008)

Motivation

- Existing consumer surveys are limited in the survey questions and limited in terms of a sound identification.
- Few questions regarding expectations and perceptions, even less on uncertainty (except NY Fed survey)
- Monthly survey frequency at best (UoM and NY Fed). Announcement effect might be blurred by other macroeconomic news within that month.

Motivation

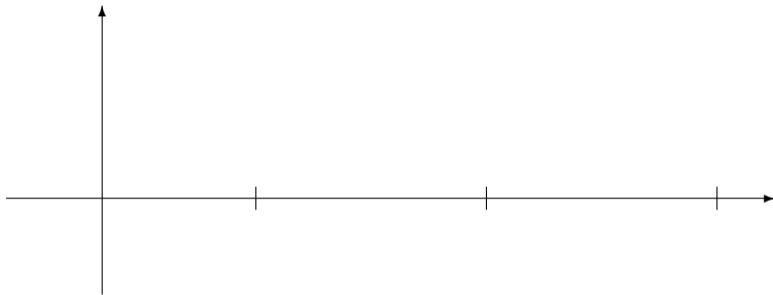New set of papers with quasi experimental approaches and tailored surveys:

- Coibion, Gorodnichenko, Weber (2019), survey of households to study how different types of communications affect inflation expectations.
- D'Acunto, Malmendier, Ospina, and Weber (2018), survey on households on expectations and attitudes
- Haldane and McMahon (2018), randomize treatment experiment on economics students about their understanding of monetary policy
- Bholat, Broughton, Parker, Meer and Walczak (2018), online survey on the understanding the inflation report

This Paper

- Generate a new survey tailored to be able to explore innovations in perceptions, expectations and confidence in inflation and interest rates
- Account for the information set of individuals.
- Allow for a sound identification and consequently for a causal interpretation as consumers are surveyed two days before and two days after the central bank announcement.

Timing

- Look at Federal Open Market Committee (FOMC) meetings since October 2015.
- Each round centered at FOMC press conference (4 times a year on a Wednesday)
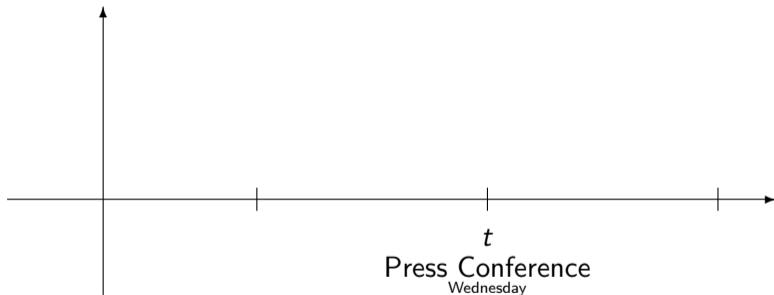
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Press Conference
Wednesday

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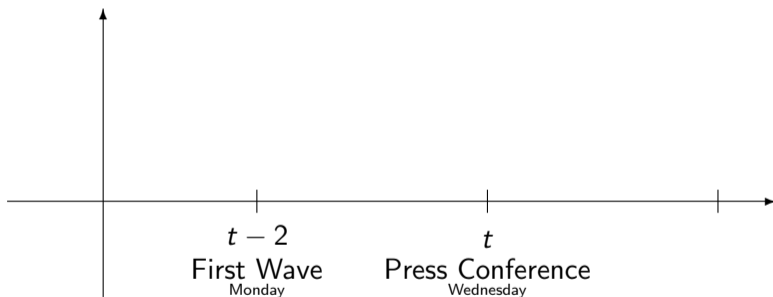$t-2$
First Wave
Monday

t
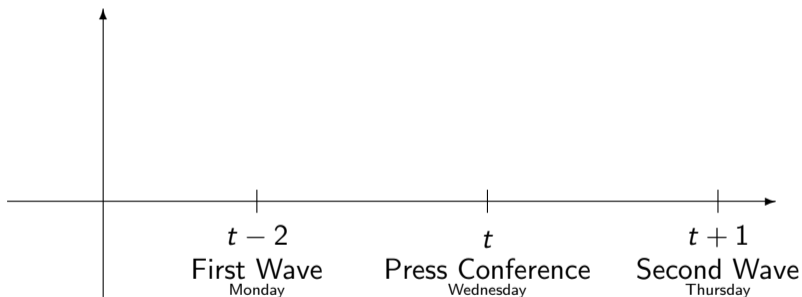Press Conference
Wednesday

Timing

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$t - 2$
First Wave
Monday

t
Press Conference
Wednesday

$t + 1$
Second Wave
Thursday

Data Collection

Online survey using Surveymonkey.

- random sample (general US population, 18+)
- incentivation via donation to a charity
- target 600 individuals before announcement and 600 after the announcement.
- typically $\sim$ 400 responses within 6 hours

Data

- Quantitative data on inflation and short-term interest rate for past 12 months and next 12 months.
- Qualitative data regarding the confidence in inflation and interest rate assessment.
- Able to distinguish between those affected and unaffected by news ("have you heard news about the Fed?")
- Plenty of individual characteristics (gender, age, region, income)
- Financial literacy
- additional questions on risk and ambiguity attitudes, financial decision making,...

Data
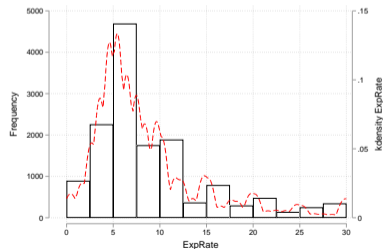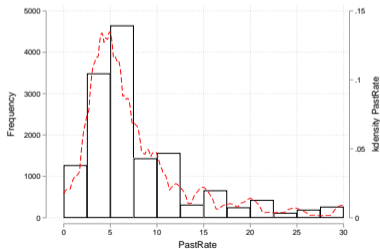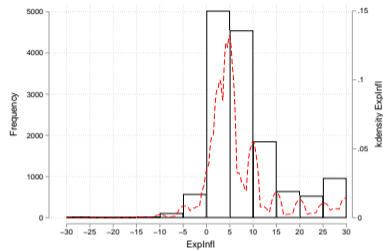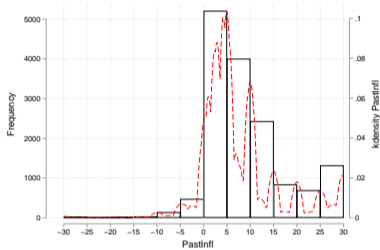
Notes: Red dashed line depicts the Kernel density. Bars show the amount of people in a specific bin.

Data

High means but:
Correlation Past Inflation and CPI 0.85
Correlation Expected Inflation and SPF 0.26

Data

variable	mean	median	sd
Confidence Past Inflation	0.43		0.49
Confidence Expected Inflation	0.40		0.48
Confidence Past Interest Rate	0.44		0.49
Confidence Expected Interest Rate	0.35		0.47
News Fed	0.35		0.48
Announcement	0.50		0.50
Gender	0.51		0.50
Age	46	52	15.17
Income	86866	75000	57472

Expectation Formation: Average Beliefs

- Average belief in the economy:

$$
\begin{aligned}
i^e(0) &= a(0) \cdot \sum_{i=i_L}^{i_H} w_i \cdot i + (1 - a(0)) \cdot \sum_{i=i_L}^{i_H} \kappa_i(i_0) \cdot i, \\
i^e(1) &= a(1) \cdot \sum_{i=i_L}^{i_H} \rho_i(i_0, i^{CB}) \cdot i + (1 - a(1)) \cdot \sum_{i=i_L}^{i_H} \kappa_i(i_0) \cdot i
\end{aligned} \tag{1}
$$

- Average expectation is related to
  - the fraction of population $a(t)$ exposed to policy news before ($t = 0$) and after ($t = 1$) the announcement
  - uncertainty of media communication (through w_i), and
  - uncertainty about how policy rate i^{CB} translates in the observed rate i (through $\rho_i(i_0, i^{CB})$).
- This highlights two possible channels through which policy communication can have an impact on expectations
  - through signaling distribution $\rho(i_0, i^{CB})$
  - through a change in the fraction of informed subjects, $a(t)$. Announcements generate more exposure to news ($a(1) > a(0)$)

Monetary Policy Announcement Effects
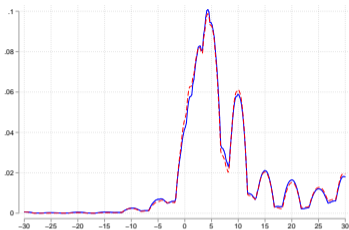
Past Inflation
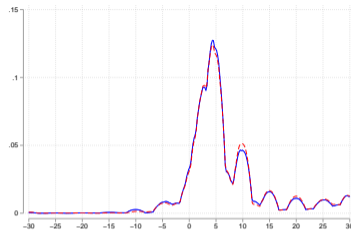
Expected Inflation
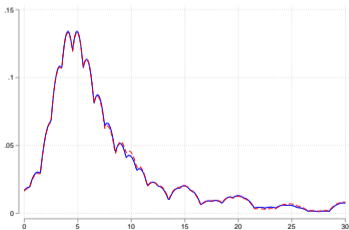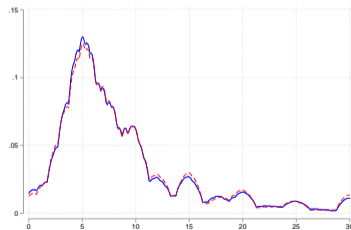
Past Interest Rate

Expected Interest Rate

Notes: Kernel density plots. Blue line shows the distribution 1-2 days before the announcement, red line depicts the distributions 1-2 days after the announcement.

News Effects
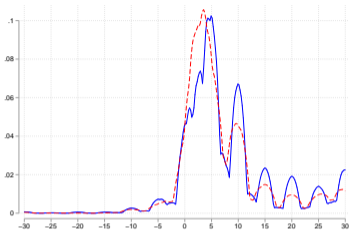
Past Inflation
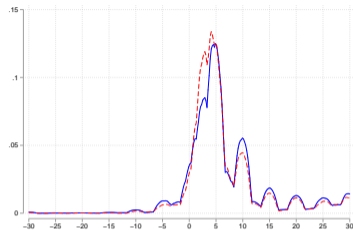
Expected Inflation
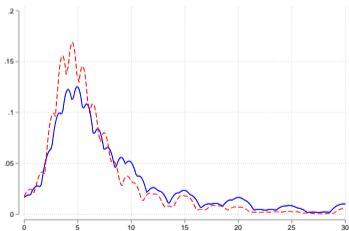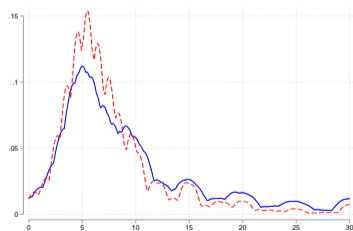
Past Interest Rate

Expected Interest Rate

Notes: Kernel density plots. Red line shows the distribution of consumers that heard news about the Fed, blue line depicts the distribution of consumers that

Do Announcements Cause Changes in Expectations and Perceptions?

Survey setup allows for a causal interpretation of announcement effect on perceptions and expectations. Announcement effect is captured by the coefficient estimate β_A. Announcement is a dummy variable being 1 if the individual is surveyed after the announcement and 0 before.

$$y_i = \alpha + \beta_A \cdot Announcement + \Gamma Z_i + \varepsilon_i, \tag{2}$$

Z_i a vector of fixed effects (sociodemographic, survey, region), ε_i error term, y_i perceptions and expectations of inflation and interest rates.

Announcement Effect

|	(1) PastInfl b/se	(2) ExpInfl b/se	(3) PastRate b/se	(4) ExpRate b/se
Announcement	-0.142	0.117	-0.004	0.034
	(0.11)	(0.09)	(0.07)	(0.08)
Survey	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes
R^2	0.025	0.020	0.024	0.033
Observations	10459	11233	10722	11188

Announcement Effect per FOMC Meeting
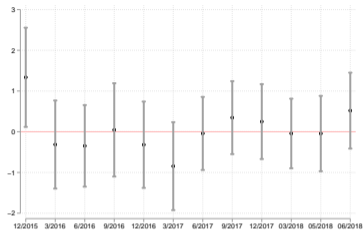
Past Inflation
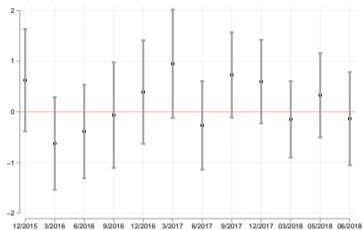
Expected Inflation
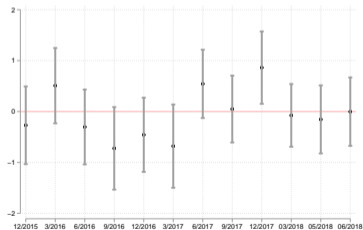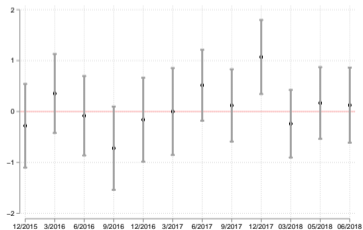
Past Interest Rate

Expected Interest Rate

Do Announcements Cause News?

Survey setup allows for a causal interpretation of announcement effect on the probability of receiving news. Announcement effect is captured by the coefficient estimate of β_A in the following equation:

$$NewsFed_i = \alpha + \beta_A \cdot Announcement + \varepsilon_i, \tag{3}$$

where $NewsFed_i$ is 1 if respondent has received news about the FED and 0 otherwise and ε_i is the error term.

Do Announcements Cause News?

News Heard	Share
Before Announcement	.31
After Announcement	.40

Do Announcements Cause News?

News Heard	Share
Before Announcement	.31
After Announcement	.40

	NewsFed (1)	NewsFed (2)
Announcement	0.078***	0.098***
	(0.01)	(0.01)
Survey	No	Yes
Demographics	No	Yes
Regional	No	Yes
Observations	15169	12523

Effect of Receiving News

To analyse the effect of receiving news on expectations and perceptions we estimate the following equation:

$$y_i = \alpha + \beta_{News} \cdot NewsFed + \Gamma Z_i + \varepsilon_i. \qquad (4)$$

Effect of Receiving News

	(1) PastInfl	(2) PastInfl	(3) ExpInfl	(4) ExpInfl	(5) PastRate	(6) PastRate	(7) ExpRate	(8) ExpRate
NewsFed	-1.079***	-0.530**	-0.656***	-0.234**	-0.837***	-0.561***	-0.977***	-0.554***
	(0.12)	(0.13)	(0.09)	(0.10)	(0.07)	(0.08)	(0.08)	(0.09)
Survey	No	Yes	No	Yes	No	Yes	No	Yes
Demogr.	No	Yes	No	Yes	No	Yes	No	Yes
Regional	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.008	0.030	0.005	0.021	0.012	0.039	0.012	0.039
Observations	10287	9573	10974	10300	10470	9789	10860	10216

News, Announcements and Quality of Perceptions, Expectations

- Explore whether hearing news improves the quality of perceptions and expectations.
- Calculate average perception error (consumer perception-consumer price inflation): ape
- Calculate average expectation gap (consumer expectations-professional forecaster expectation): aeg

News, Announcements and Quality of Perceptions, Expectations

	(1)	(2)	(3)	(4)	(5)	(6)
	ape	ape	ape	aeg	aeg	aeg
	b/se	b/se	b/se	b/se	b/se	b/se
Announcement	-0.180	-0.135	0.184	0.066	0.095	0.333***
	(0.12)	(0.12)	(0.16)	(0.09)	(0.09)	(0.12)
NewsFed		-0.539***	-0.116		-0.274***	0.046
		(0.14)	(0.19)		(0.10)	(0.14)
NewsFed $\times$ Announcement			-0.827***			-0.614***
			(0.25)			(0.18)
Survey	Yes	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.032	0.034	0.035	0.022	0.023	0.024
Observations	8592	8592	8592	9235	9235	9235

Announcements Effect on Confidence

To investigate the importance of announcements and news for the probability of being confident, we estimate the following probit regression:

$$F(Confidence_i) = \alpha + \beta_A \cdot Announcement + \Gamma Z_i + \varepsilon_i. \tag{5}$$

Announcements Effect on Confidence

	(1) PastInfl b/se	(2) ExpInfl b/se	(3) PastRate b/se	(4) ExpRate b/se
Panel A				
Announcement	0.003	-0.008	-0.009	-0.002
	(0.01)	(0.01)	(0.01)	(0.01)
Survey	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes
Panel B				
NewsFed				
Before Announcement	0.115***	0.106***	0.102***	0.113***
	(0.02)	(0.02)	(0.02)	(0.01)
After Announcement	0.038***	0.062***	0.043***	0.057***
	(0.01)	(0.01)	(0.01)	(0.01)
Survey	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes
Observations	10459	11233	10722	11188

Value of a Press Conference

- Unclear how much value-added a press conference actually has in terms of informing the general public.
- To analyse this we re-run the our survey on a FOMC meeting **without** a press conference.
- We compare how many people receive news/ become informed on a FOMC meeting with a press conference and without a press conference.
- Econometrically we add a dummy variable for the non-press conference announcement week first and interact it in a second step.

Value of a Press Conference

	(1) NewsFed	(2) NewsFed	(3) NewsFed
Announcement	0.078***	0.095***	
	(0.01)	(0.01)	
NoPress	-0.072***	-0.102***	
	(0.01)	(0.01)	
Announcement Press			0.107***
			(0.01)
Announcement NoPress			0.015
			(0.03)
Survey	No	Yes	Yes
Demographics	No	Yes	Yes
Regional	No	Yes	Yes
Observations	15169	12523	12523

Conclusions

- No measurable effect of FOMC meetings on consumer expectations and perceptions.
- Both information channel and exposure channel relevant.
- Announcements increase exposure to news.
- Exposure to news improves the quality of perceptions and expectations, increases confidence and reduces dispersion.
- Highlight the importance of holding a press conference.

thank you for your attention