

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
- 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 on the way:

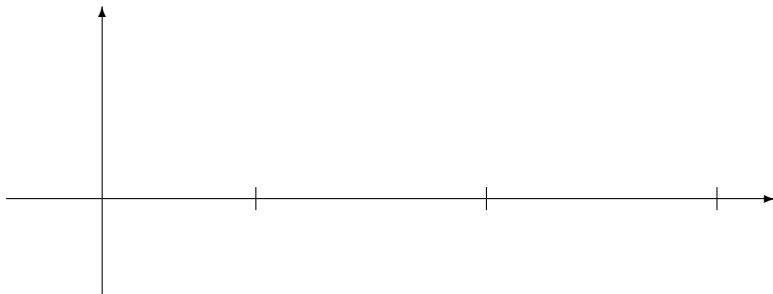
- Coibion, Gorodnichenko, Weber (2019), Large new survey of households to study how different types of communications affect inflation expectations.
- Haldane and McMahon (2018), randomize treatment on economics students about their understanding of monetary policy
- Bholat, Broughton, Parker, Meer and Walczak (2018), new 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 as consumers are surveyed two days before and two days after the central bank announcement.

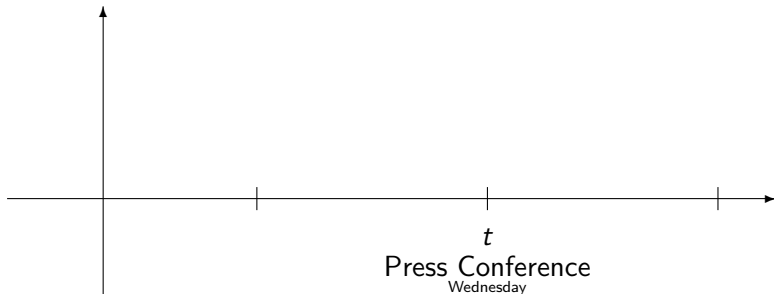
Timing

- Look at Fed meetings since October 2015.
- Each round centered at Fed press conference (4 times a year on a Wednesday)



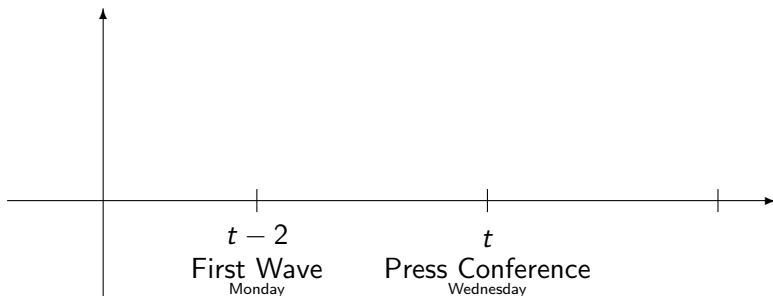
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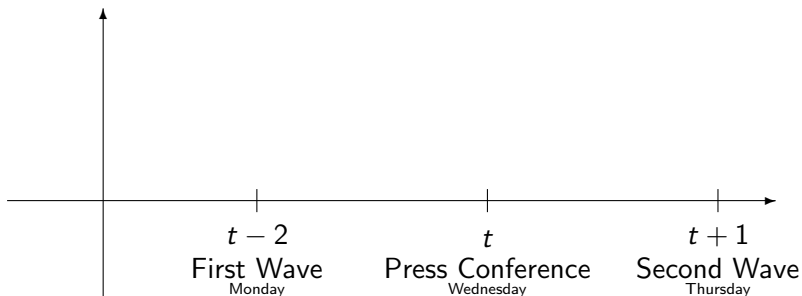
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Data Collection

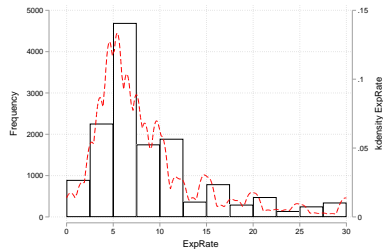
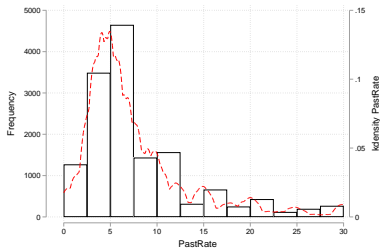
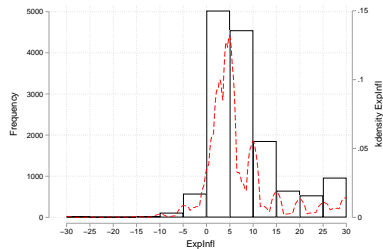
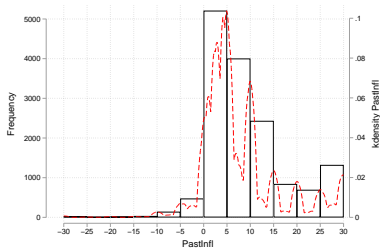
Online survey using SurveyMonkey.

- random sample (general US population, 18+)
- incentivisation 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)
- Measure risk- and ambiguity-attitudes
- Financial literacy
- Financial decision making ("if you had \$1000 how would you use it now?")

Data



Notes: RED dashed line depicts the Kernel density.

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 Announcement	0.35		0.48
Gender	0.50		0.50
Age	0.51		0.50
Income	46	52	15.17
	86866	75000	57472

Expectation Formation: average beliefs

- Average belief in the economy:

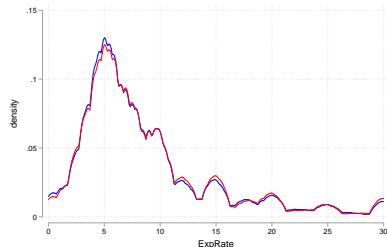
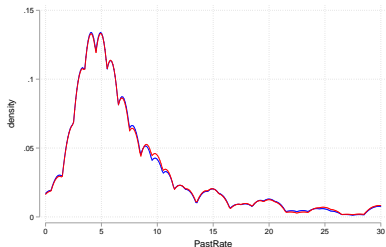
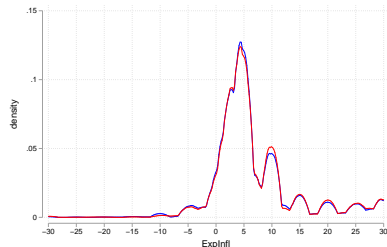
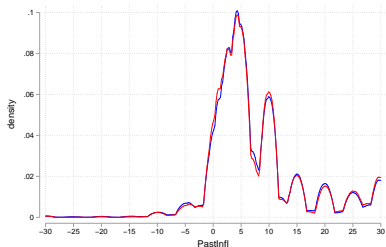
$$\begin{aligned}i^e(0) &= a(0) \cdot \sum_{i=i_L}^{i_H} w_i \cdot i + (1 - a(0)) \cdot \sum_{i=i_L}^{i_H} \kappa_i(i_0) \cdot i, \\i^e(1) &= a(1) \cdot \sum_{i=i_L}^{i_H} \rho_i(i_0, i^{CB}) \cdot i + (1 - a(1)) \cdot \sum_{i=i_L}^{i_H} \kappa_i(i_0) \cdot i.\end{aligned}\tag{1}$$

- 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 ($a(1) > a(0)$)

Implications

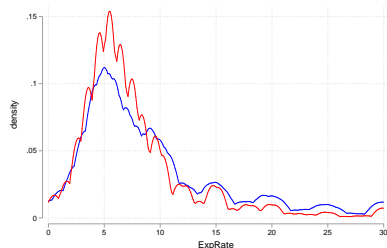
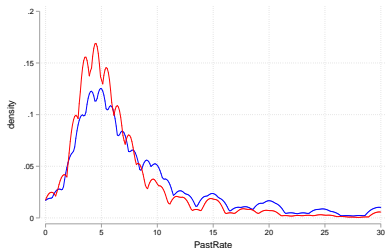
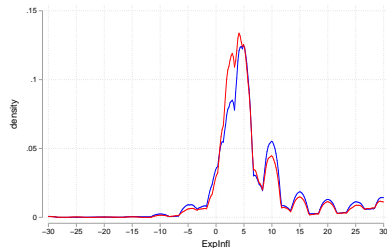
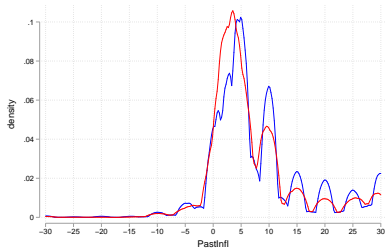
- Announcement affects expectations and perceptions if news exposure increases ($a(1) > a(0)$) and/or new information is provided ($i^e(1) \neq i^e(0)$)
- Announcement could have no (measurable) effect at all.
- Analyse effect of announcements for news exposure (change the fraction of informed subjects $a(t)$).
- Higher precision should reduce variance of expectations and perceptions after announcement.

Effects of Monetary Policy - Before and After Announcement



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.

Effects of Monetary Policy - News Effects



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 heard no news about the Fed.

Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PastInfl	PastInfl	ExplInfl	ExplInfl	PastRate	PastRate	ExpRate	ExpRate
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Announcement	-0.141 (0.11)	-0.118 (0.12)	0.116 (0.09)	0.123 (0.09)	-0.004 (0.07)	0.047 (0.07)	0.034 (0.08)	0.088 (0.08)
NewsFed		-0.259* (0.13)		-0.073 (0.10)		-0.572*** (0.08)		-0.577*** (0.09)
Survey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
r2	0.025	0.025	0.020	0.020	0.024	0.029	0.033	0.036
N	10459	10459	11233	11233	10722	10722	11188	11188

News and Announcements

News Heard	Share
Before Announcement	.31
After Announcement	.40

News and Announcements

	News Heard	Share
	Before Announcement	.31
	After Announcement	.40

	(1)	(2)
	b/se	with controls b/se
NewsFed		
Announcement (d)	0.078*** (0.01)	0.098*** (0.01)
Survey	No	Yes
Demographics	No	Yes
Regional	No	Yes
N	15169	12523

Note: Marginal Effects reported

News and Announcements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PastInfl	PastInfl	ExplInfl	ExplInfl	PastRate	PastRate	ExpRate	ExpRate
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
NewsFed=1	-0.279** (0.13)	0.085 (0.18)	-0.061 (0.10)	0.347** (0.14)	-0.563*** (0.08)	-0.540*** (0.11)	-0.563*** (0.09)	-0.454*** (0.12)
Announcement=1		0.152 (0.14)		0.440*** (0.11)		0.069 (0.09)		0.180 (0.11)
NewsFed=1 X Announcement=1		-0.682*** (0.24)		-0.808*** (0.18)		-0.054 (0.14)		-0.230 (0.16)
Survey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
r2	0.023	0.024	0.019	0.021	0.028	0.029	0.036	0.036
N	10459	10459	11233	11233	10722	10722	11188	11188

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=1	-0.202 (0.11)	-0.177 (0.12)	0.122 (0.15)	0.008 (0.12)	-0.005 (0.12)	0.200 (0.18)
NewsFed=1		-0.308* (0.17)	0.089 (0.25)		0.130 (0.16)	0.401 (0.25)
NewsFed=1 X Announcement=1			-0.771** (0.29)			-0.525 (0.32)
Survey	Yes	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes	Yes
Regional	Yes	Yes	Yes	Yes	Yes	Yes
r2	0.028	0.028	0.029	0.021	0.021	0.021
N	9389	9389	9389	9354	9354	9354

News and Variance

NewsFed	PastRate	ExpRate	PastInfl	ExplInfl
0	6.21	6.57	8.90	8.19
1	4.77	5.09	7.51	7.01
Unconditional	5.79	6.10	8.46	7.78

News and Variance

NewsFed	PastRate	ExpRate	PastInfl	ExplInfl
0	6.21	6.57	8.90	8.19
1	4.77	5.09	7.51	7.01
Unconditional	5.79	6.10	8.46	7.78

News Conditional on Announcement	PastRate	ExpRate	PastInfl	ExplInfl
0	4.74	4.99	7.84	6.79
1	4.80	5.17	7.24	7.18
Unconditional	4.77	5.09	7.51	7.01

News and Confidence

	Past Rate	Expected Rate	Past Inflation	Expected Inflation
No News	0.37	0.28	0.39	0.32
News Heard	0.50	0.41	0.49	0.45
Unconditional	0.42	0.32	0.42	0.37

Announcement Effect conditional on News Heard

	Past Rate	Expected Rate	Past Inflation	Expected Inflation
0	0.51	0.42	0.52	0.46
1	0.48	0.40	0.48	0.44
Total	0.50	0.41	0.49	0.45

Value of a Press Conference

- Unclear how much value-added a press conference actually is in terms of informing the general public.
- To analyse this we re-run the same survey on a Fed meeting day **without** a press conference.
- We compare the impact on how many people receive news/ become informed.
- 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) est1 b/se	(2) with controls b/se	(3) with controls b/se
NewsFed Announcement (d)	0.078*** (0.01)	0.095*** (0.01)	0.103*** (0.01)
nopress (d)	-0.072*** (0.01)	-0.102*** (0.01)	-0.061*** (0.02)
Anopress (d)			-0.083*** (0.03)
Survey	No	Yes	Yes
Demographics	No	Yes	Yes
Regional	No	Yes	Yes
N	15169	12523	12523

Note: Marginal Effects reported

Robustness and Extensions

- Implications [here!](#)
- Changes vs. non-changes
- Surprise changes
- Postponed events

Conclusions

- Show that central bank communication matters for consumers.
- Both information channel and exposure channel relevant.
- 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

Implications

Link saving spending decisions with the expected real interest rates and confidence.

If you had an extra \$1,000 now, how much of this amount, in dollars, you would spend in the current situation on the following (you can also allocate the whole amount to just one option):

- a) Stocks (mutual funds)
- b) Safe assets (401k, pension funds, treasury bills)
- c) Term deposit for 3 months or more
- d) Mortgage contribution (raise mortgage deposit or make an extra payment)
- e) Buy a car, holiday trip, jewelery or durable goods like a fridge/freezer
- f) Other household expenses

Generate two new variables that might be relevant: Expected Real Interest rate (expected rate - expected inflation) and confidence in the real expected rate estimate (confidence in expected rate and expected inflation).

Implications

$$S/I_{t,i} = \alpha + \beta_1 E(r)_{t,i} + \beta_2 C(r)_{t,i} + \varepsilon_{t,i}$$

with

$$E(r)_{t,i} = P(i)_{t,i} - E(\pi)_{t,i}$$

$$C(r)_{t,i} = C(P(i))_{t,i} - C(E(\pi))_{t,i}$$

Implications

	(1)	(2)	(3)	(4)	(5)	(6)
	Stocks	Safe	Deposit	Mortgage	Durable	Other
Announcement	-4.498 (4.90)	0.674 (5.94)	1.924 (4.43)	-4.003 (6.62)	12.354 (7.23)	-6.452 (9.28)
NewsFed	84.061*** (8.08)	15.388* (7.60)	15.376** (5.89)	3.735 (8.19)	-29.155*** (8.16)	-89.405*** (11.09)
Announcement \times NewsFed	-17.902 (10.54)	0.299 (10.24)	-7.984 (7.90)	-0.889 (10.87)	0.763 (11.24)	25.713 (14.97)
Constant	162.974*** (11.18)	154.070*** (11.07)	92.150*** (8.63)	120.564*** (11.72)	112.730*** (12.07)	357.512*** (16.47)
Observations	12523	12523	12523	12523	12523	12523

Implications

	(1)	(2)	(3)	(4)	(5)	(6)
	Stocks	Safe	Deposit	Mortgage	Durable	Other
ExpRealrate	-0.907** (0.28)	-0.239 (0.32)	-0.382 (0.23)	-0.359 (0.38)	0.343 (0.43)	1.544** (0.53)
NewsFed	67.675*** (6.47)	16.569** (6.41)	9.701 (4.97)	7.149 (6.89)	-31.166*** (7.12)	-69.927*** (9.53)
NewsFed×ExpRealrate	0.175 (0.64)	-0.008 (0.58)	-0.352 (0.43)	-0.178 (0.63)	1.338* (0.65)	-0.976 (0.87)
CONFRealrate	11.398 (5.91)	11.550 (6.97)	0.062 (4.96)	20.909** (7.76)	-13.493 (8.07)	-30.425** (10.59)
CONFRealrate×NewsFed	10.707 (11.49)	-6.169 (11.21)	3.407 (8.47)	-18.325 (11.87)	11.749 (12.05)	-1.369 (16.10)
Observations	12523	12523	12523	12523	12523	12523