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A KISS for central bank communication in times of high inflation

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▎Motivation — Return of high inflation

Communication can be a powerful toolkit of a central bank ...

> *"Monetary policy is 98% talk and only two percent action, and communication is a big part"*
>
> — B. Bernanke (2015)

...if it can actually reach households

> *"Central banks will keep trying to communicate with the general public, as they should, for the most part they will fail"*
>
> — A. Blinder (2018)

> *"The effective communication of policy will always be a challenging endeavour"*
>
> — C. Lagarde (2023)

How should the inflation outlook be communicated to guide households' expected inflation towards the target?

❚What we do

Survey around 10,000 households (HHs) from the BOP-HH in two different inflation environments from March and October '22

In a RCT framework, we provide HHs with genuine ECB/Eurosystem communication about the ECB's inflation outlook

Information treatments categorized as 'numerical', 'verbal' and 'visual'

Assess which of the communication treatments show largest impact on BOP-HH participants' assessments of future inflation

Rank/recommend implementable communication options

What we find

Central bank communication can help to bring HHs' inflation expectations back towards the target

But central banks should **K**eep **I**t **S**ophisticatedly **S**imple

- 'Verbal' treatment: soothingly framed communication style works best in lowering high short term expectations

- 'Visual' treatment: graphical representation of inflation outlook lowers expectations consistently across all expectations horizons

Results add to a growing literature, which assesses the effects of central bank communication with the general public

Blinder, Ehrmann, de Haan, Jansen (2022); Coibion, Gorodnichenko, Kumar (2018); Coibion, Gorodnichenko, Weber, (2020, 2022); D'Acunto, Hoang, Paloviita, Weber (2020); D'Acunto, Fuster, Weber (2021); Dräger, Lamla, Pfajfar (2022); Ehrmann, Georgarakos, Kenny (2023); among others

Experimental Design and Information Treatments

❙Experimental design (RCT)

Collected around 10,000 responses in two different inflation environments from March and October '22 waves of BOP-HH

Step 1: respondents receive information that ECB's inflation target is 2%

- Make probabilistic assessment for inflation 1Y, 2-3Y, 5-10Y ahead

Today's focus is on the October '22 wave of BOP-HH

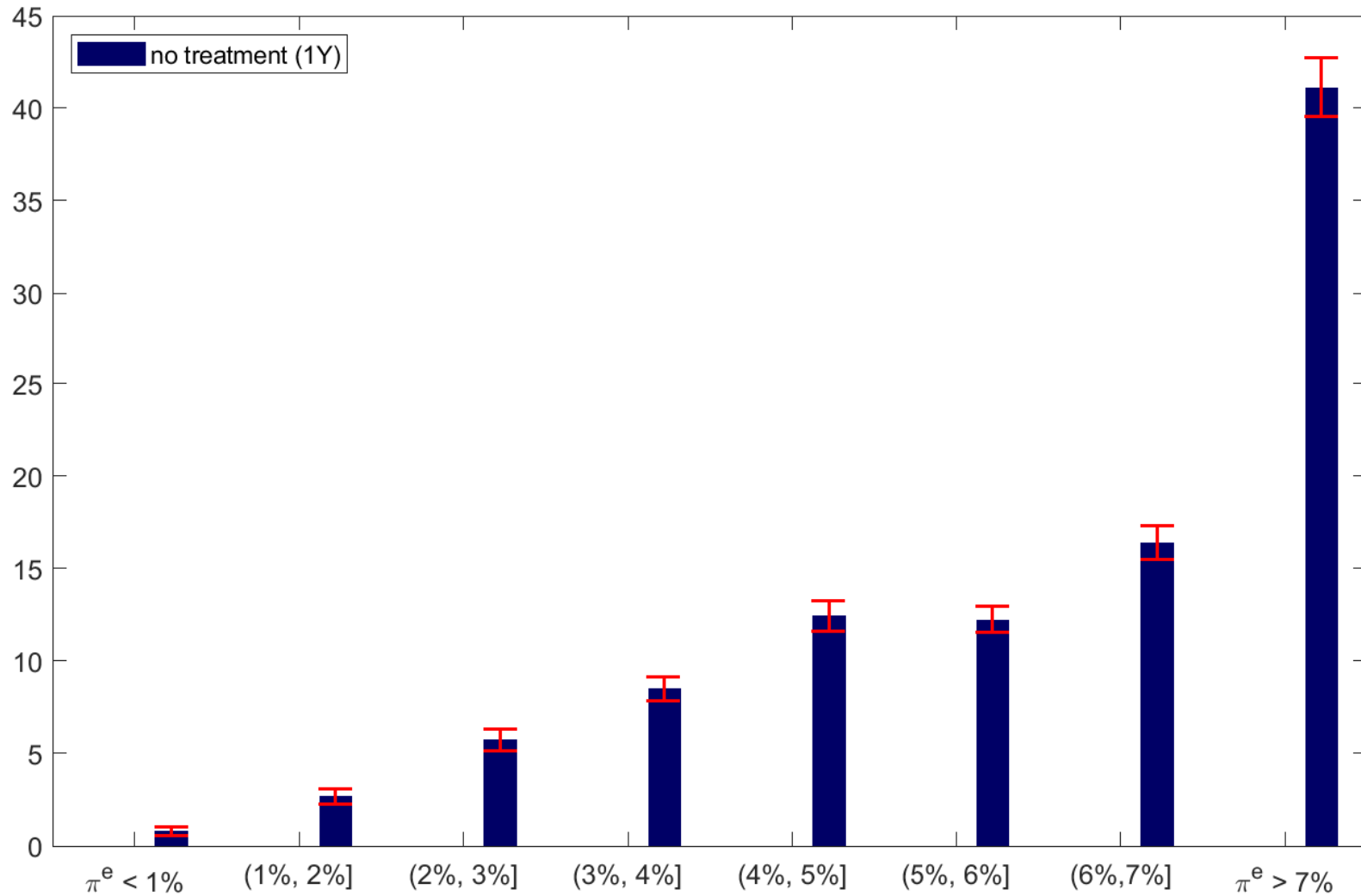# Short term expected inflation strongly elevated

Figure 1: Average probabilities for inflation 1Y ahead from BOP-HH, October 2022.

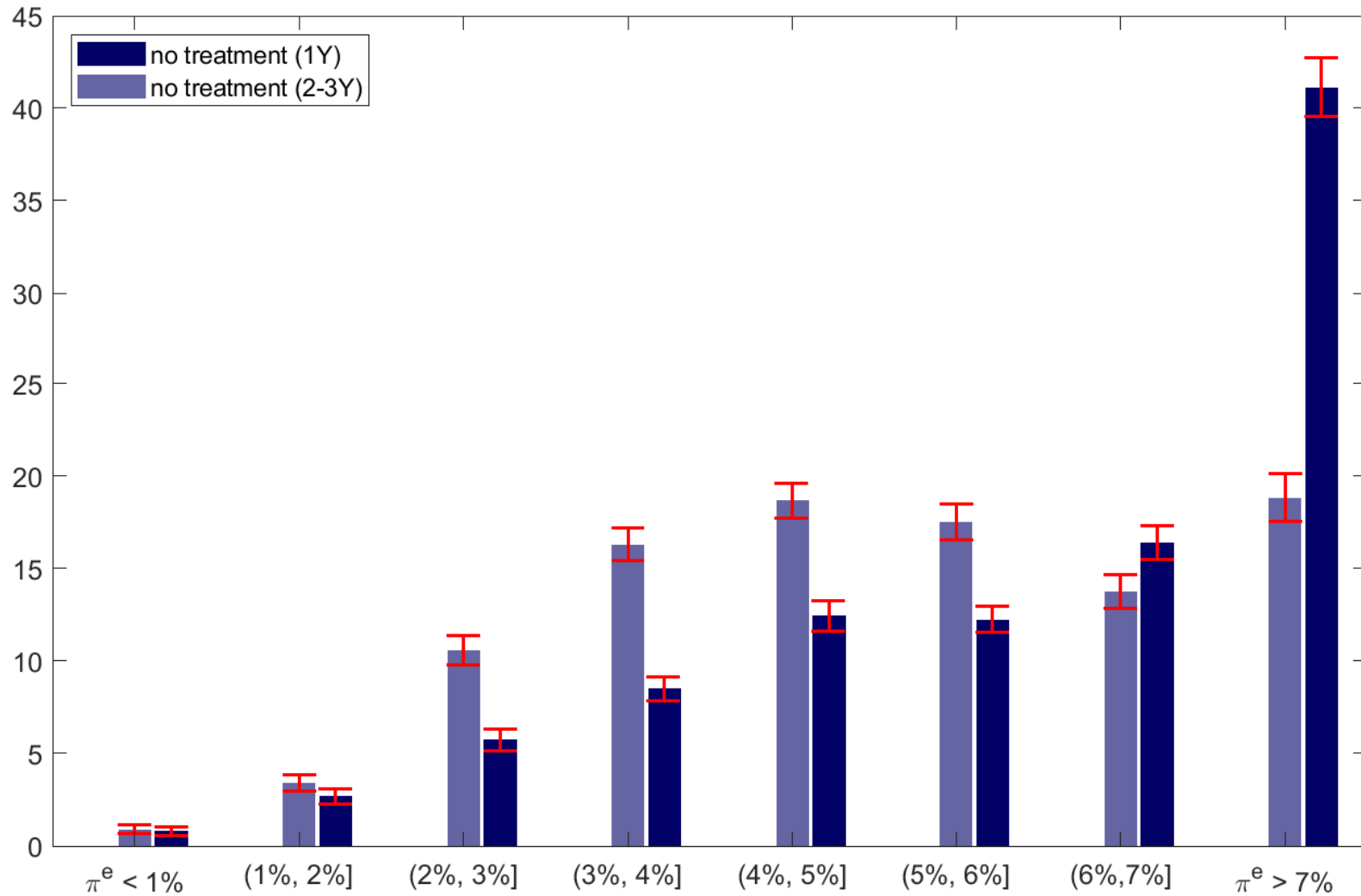# Medium term expected inflation fairly elevated

Figure 2: Average probabilities for inflation 2-3Y ahead from BOP-HH, October 2022.

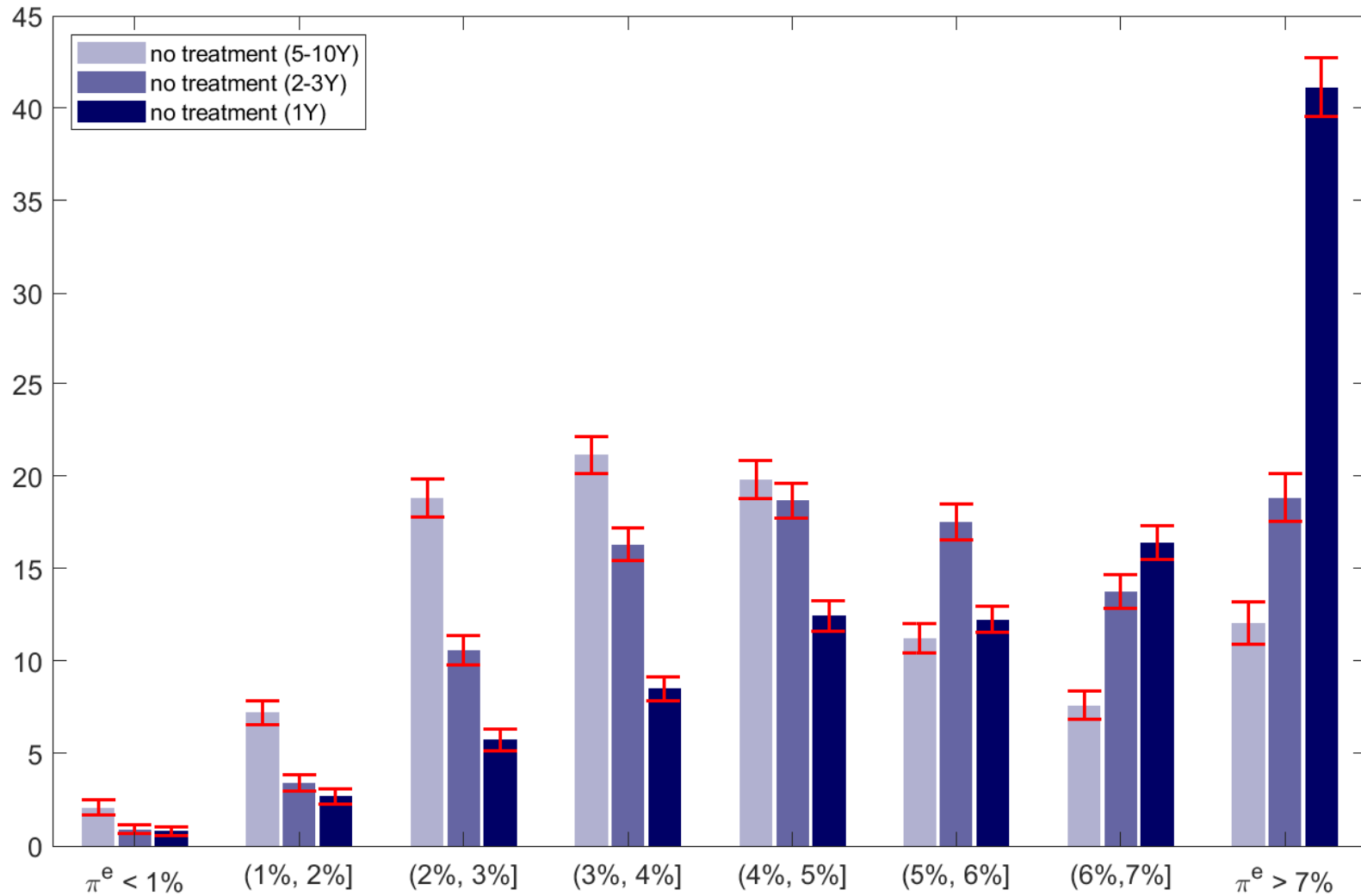# Even long-run expectations still above target

Figure 3: Average probabilities for inflation 5-10Y ahead from BOP-HH, October 2022.

Experimental design (RCT)

Collected around 10,000 responses in two different inflation environments from March and October '22 waves of BOP-HH

Step 1: respondents receive information that ECB's inflation target is 2%

- Make probabilistic assessment for inflation 1Y, 2-3Y, 5-10Y ahead

Step 2: respondents randomly sampled into subgroups receive treatment

- Variations of ECB communication regarding medium-term inflation outlook: (i) 'numerical' (ii) 'visual' (iii) 'verbal'

Step 3: treated respondents asked (again) about expected inflation over three horizons: 1Y, 2-3Y, 5-10Y ahead

- Compare inflation expectations from steps 1 and 3 (of control and treated groups)

▸ RCT

▮Information treatments — 'numerical'

T1: **'forecast'**: Sep '22 ECB projections for '22, '23 and '24

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro area. The ECB's current projections from September 2022 forecast inflation rates of 8.1% for 2022, 5.5% for 2023, and 2.3% for 2024.

T2: **'revision'**: Jun '22 ECB projections and revisions for '22, '23, '24

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro area. In June 2022, the ECB had forecast inflation rates of 6.8% for 2022, 3.5% for 2023 and 2.1% for 2024. The ECB's current projections from September 2022 now forecast inflation rates of 8.1% for 2022, 5.5% for 2023, and 2.3% for 2024.

▌Information treatments — 'visual'

T3: Jun '22 and Sep '22 ECB projections as a **table**

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro area.

In June 2022, the ECB had forecast the following inflation rates:

	2022	2023	2024
Euro area HICP (i), annual percentage changes	6.8	3.5	2.1

The latest ECB projections from September 2022 now forecast the following inflation rates:

	2022	2023	2024
Euro area HICP (i), annual percentage changes	8.1	5.5	2.3

▌Information treatments — 'visual'

T4: 2021 inflation and Sep '22 ECB projections as a **graph**

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term. The latest projections from September 2022 are shown in the chart from the ECB's website below:

Euro area inflation in 2021 and projections for this and the coming years (projections from September 2022)

8.1%

5.5%

2.6%

2.3%

2%

2021 2022 2023 2024
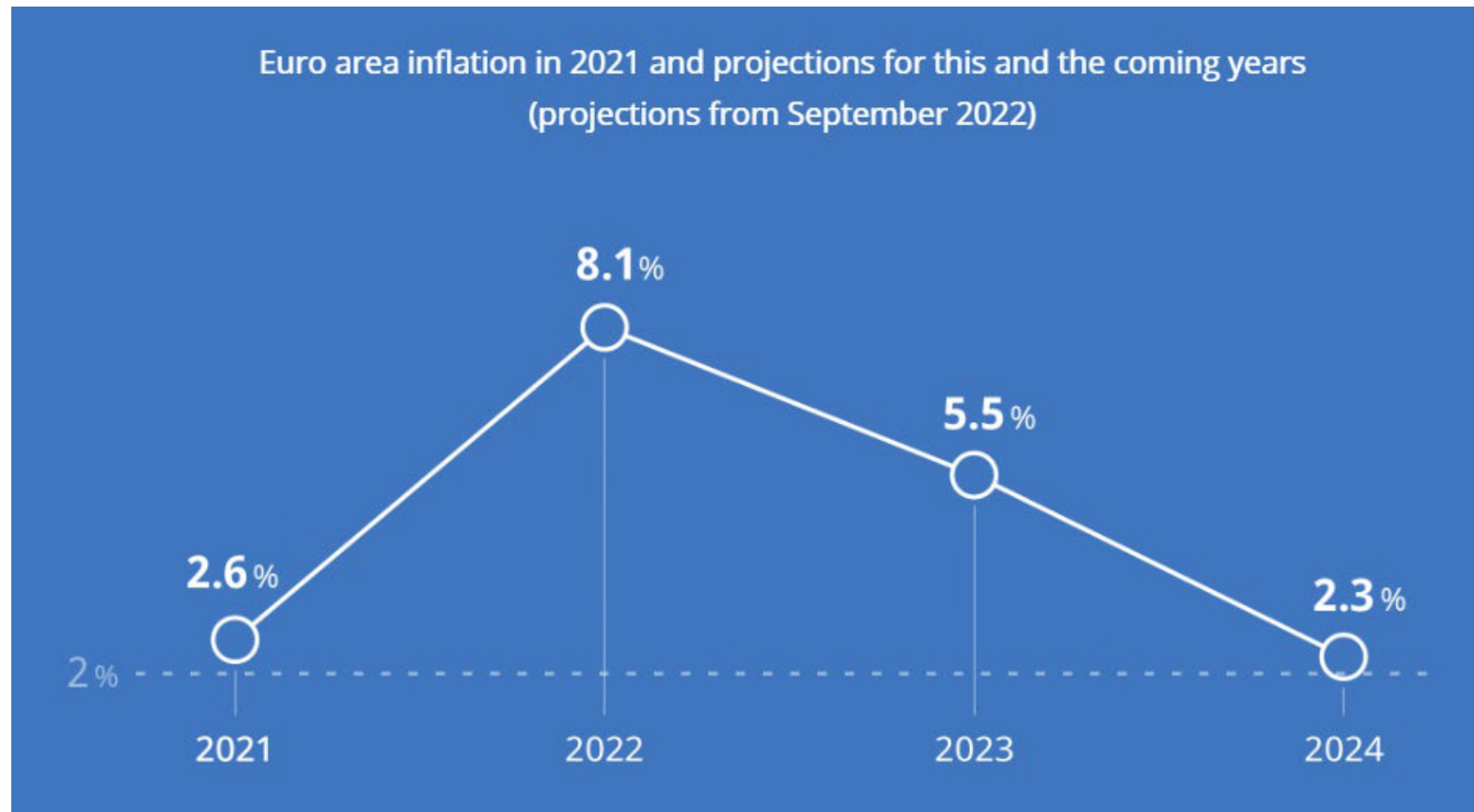
Information treatments — 'verbal'

T5: **'high rates'**:
citation of Bundesbank President Nagel being worried inflation rates are
yet to peak

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro
area. In an interview with the "Rheinische Post" newspaper on 20 August, Bundesbank President
Joachim Nagel expressed his concern about the current inflation rates. "Overall, an inflation rate of
10% is even possible in the autumn months. […] There is a growing probability that inflation will be
higher than previously forecast and that, on average next year, we will have a six before the decimal
point."

▌Information treatments — 'verbal'

T6: **'high rates + GC action'**:
adds to 'high rates' that Governing Council determined to raise rates further; info on 75bps interest rate step of Sep 2022

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro area. In an interview with the "Rheinische Post" newspaper on 20 August, Bundesbank President Joachim Nagel expressed his concern about the current inflation rates. "Overall, an inflation rate of 10% is even possible in the autumn months. [...] There is a growing probability that inflation will be higher than previously forecast and that, on average next year, we will have a six before the decimal point."

He explained: "In order to achieve our objective, we gave a marked signal at our ECB Governing Council meeting on 21 July. We raised the key interest rate by half a percentage point and signalled further steps. [...] Given the high rates of inflation, further interest rate steps need to be taken."

The ECB subsequently raised the key interest rates again by 0.75 percentage point in its decision on interest rates of 8 September.

▌Information treatments — 'verbal'

T7: **'GC control'**:
citation of ECB Executive Board member Schnabel sharing worries about high future inflation rates, highlighting that CBs act determinedly; info on 75bps interest rate step of Sep 2022

The European Central Bank (ECB) aims at an inflation target of 2% over the medium term for the euro area. In a widely regarded speech at the Economic Policy Symposium – an annual meeting of key central bankers in Jackson Hole (Wyoming, United States) – at the end of August, German ECB Executive Board member Isabel Schnabel stated that "high inflation has become the dominant concern of citizens in many countries". She highlighted that central banks would have to act forcefully in times of high inflation so that the general public would not lose confidence in central banks bringing inflation back down to the 2% target. The ECB subsequently raised the key interest rates again by 0.75 percentage point in its decision on interest rates of 8 September.

Can communication help guiding expectations towards target?

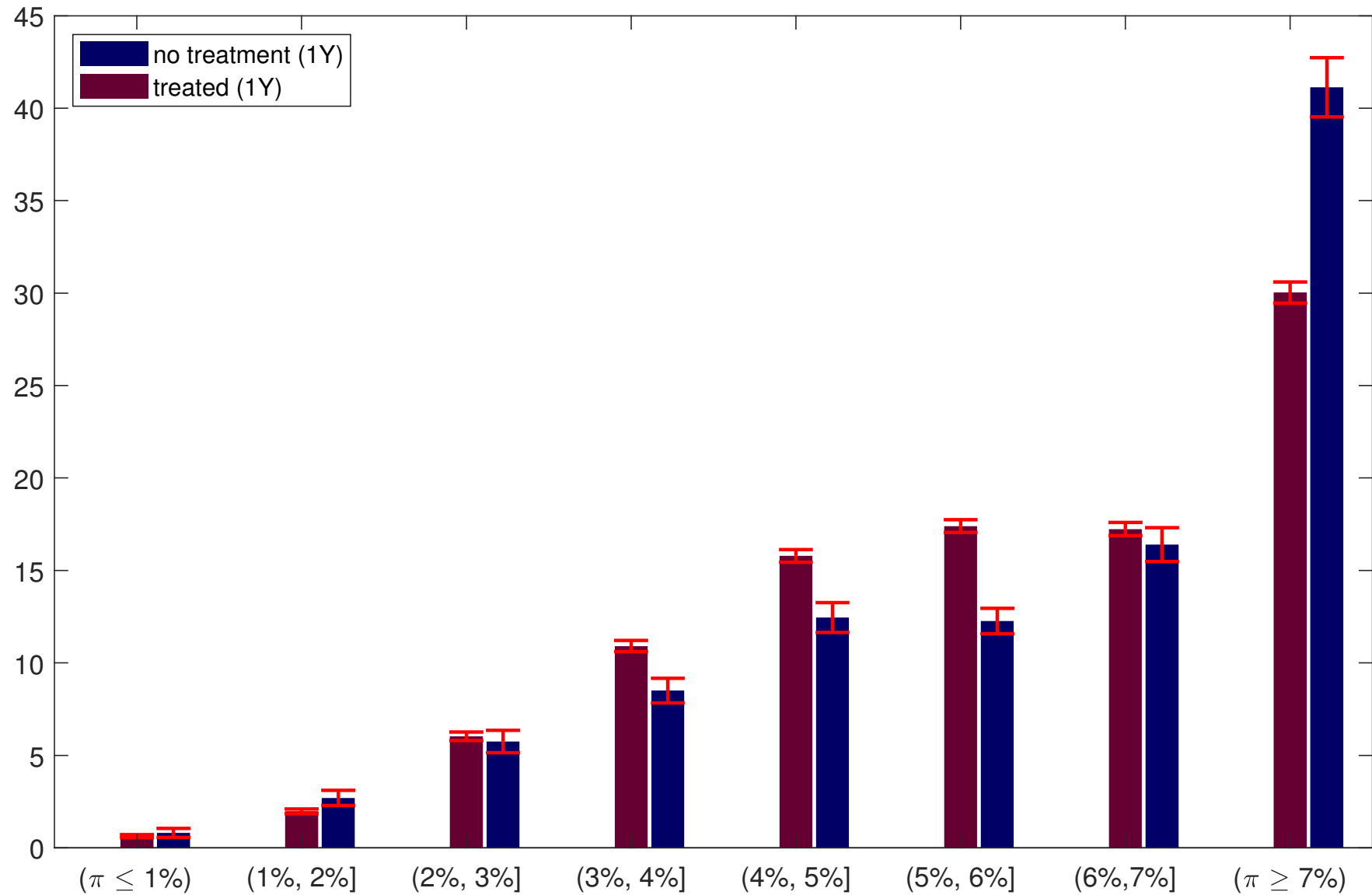# CB communication lowers π^e in the short-run

Figure 4: Average probabilities for inflation 1Y ahead. Untreated group in blue, treated (pooled over T1-T7) in red.
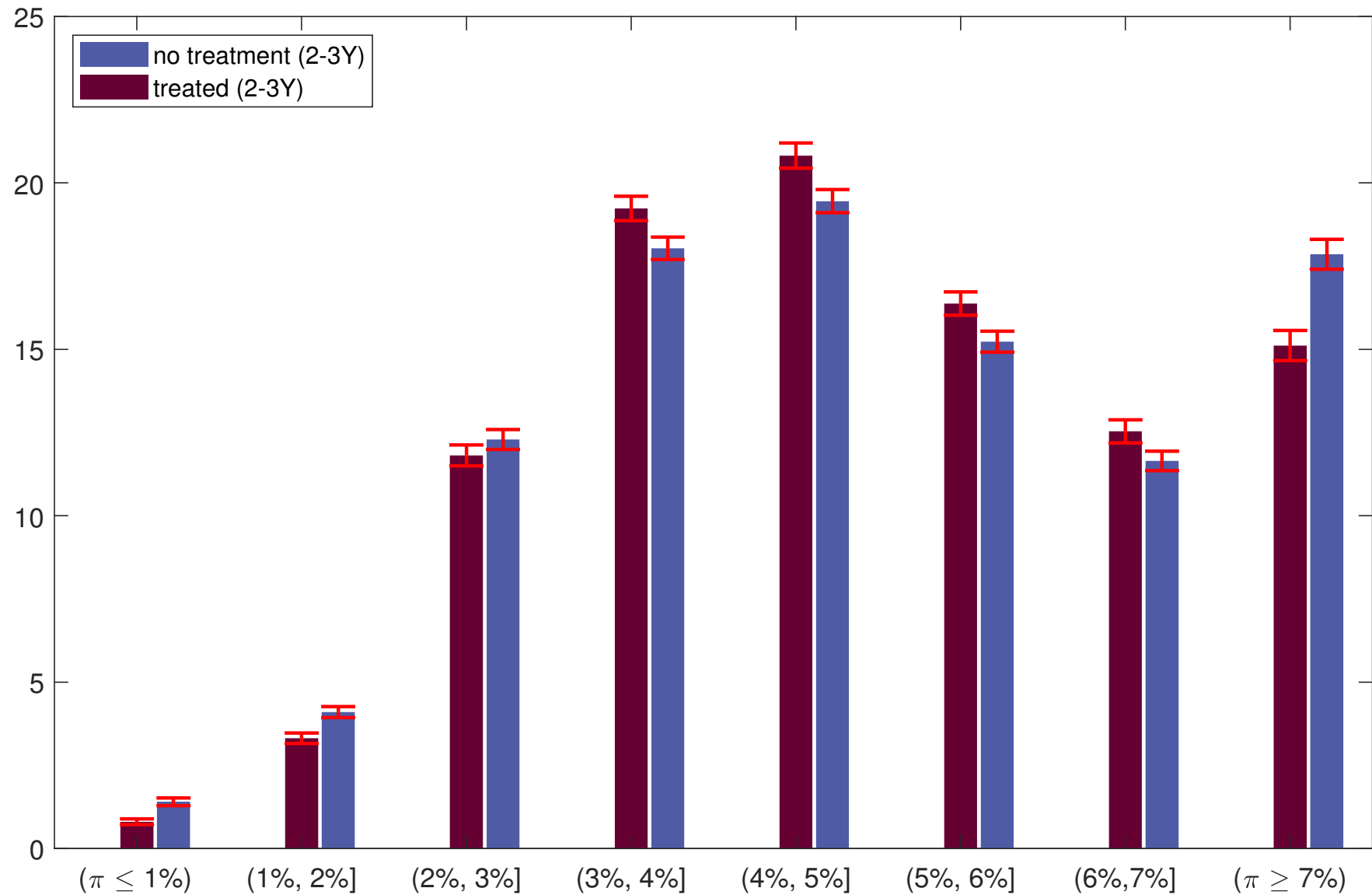
... but also in the medium-run

Figure 5: Average probabilities for inflation 2-3Y ahead. Untreated group in blue, treated (pooled over T1-T7) in red.
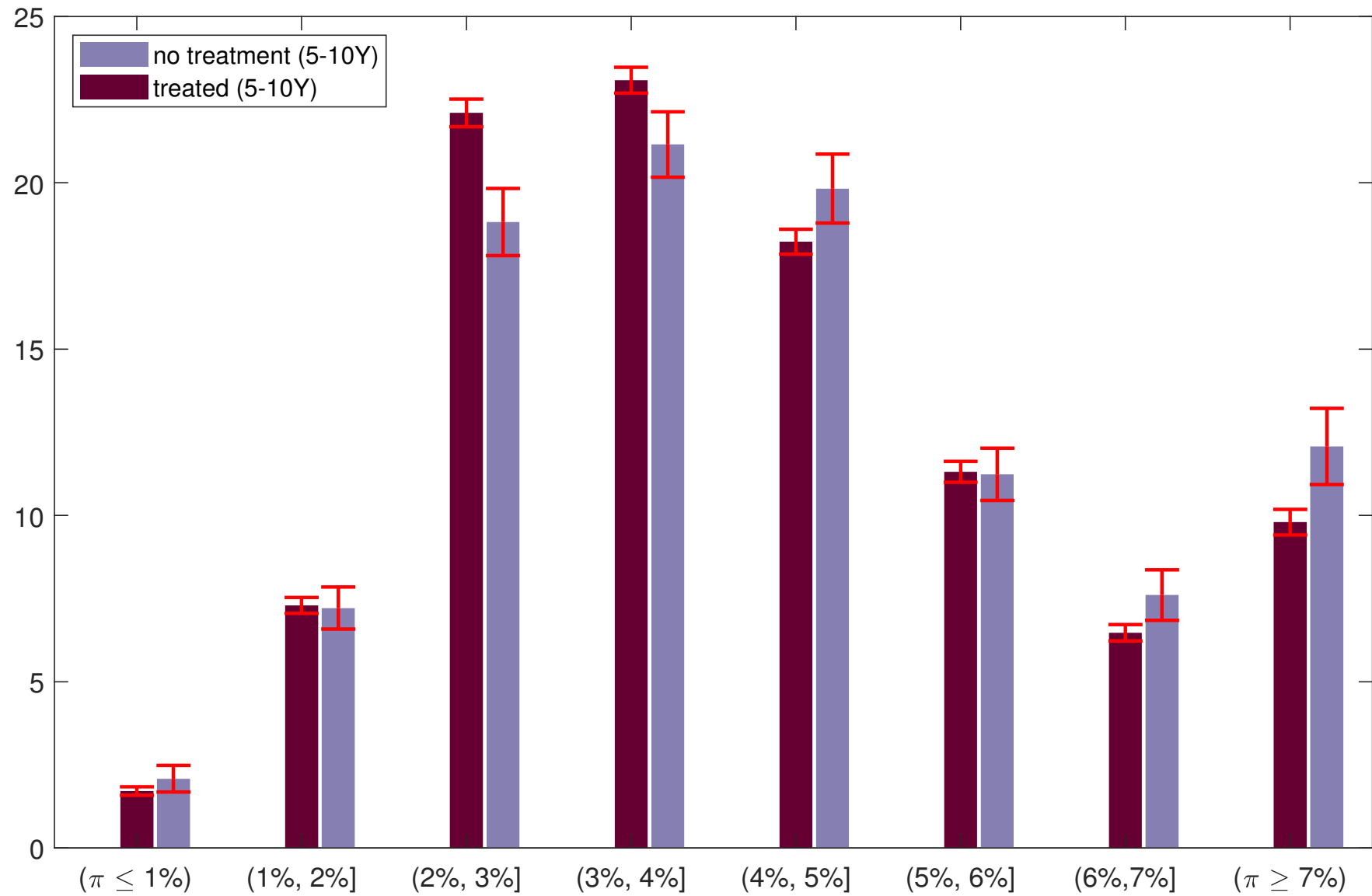
❚...and in the longer-run

Figure 6: Average probabilities for inflation 5-10Y ahead. Untreated in blue, treated (pooled over T1-T7) in red.

Econometric set-up

Fit a distribution to the discrete histograms via standard methodology (Engelberg et al, 2009)

(Pooled) regression using Huber weighting:

$$\mathbb{E}[\pi]_i^{post} = \alpha + \sum_{s=1}^{S} \beta_s d_i^s + \gamma W_i + \varepsilon_i, \tag{1}$$

where s indexes the treatments T1 - T7

- α reflects the mean expected inflation of the control group

- β_s is the ATE of treatment s on mean expected inflation

- estimate eq.(1) for each horizon $h \in \{$ 1Y, 2-3Y, 5-10Y $\}$ separately

▸ Quantification

❚Effects on mean expected inflation

	1Y	2-3Y	5-10Y
control	6.15***	5.48***	4.40***
treated	−0.37***	−0.21**	−0.21***
Observations	4756	4767	4756

Notes: Asterisks (***,** ,*) denote statistically significant differences at the 1,5, and 10% levels, respectively. All observations are weighted using survey weights. Group 'treated' is pooled over treated groups T1-T7.

Setting the size of results in perspective to gains from stabilizing inflation (towards the target):

- CB which puts more weight on inflation stabilization mitigates the de-/inflationary bias by up to 30 b.p. (e.g. Nakata, Schmidt; 2019)

- HHs provided with CB communication about inflation outlook/target reduce on average π^e by around 20 b.p.(2-3y/5-10y) to 40 b.p.(1y)
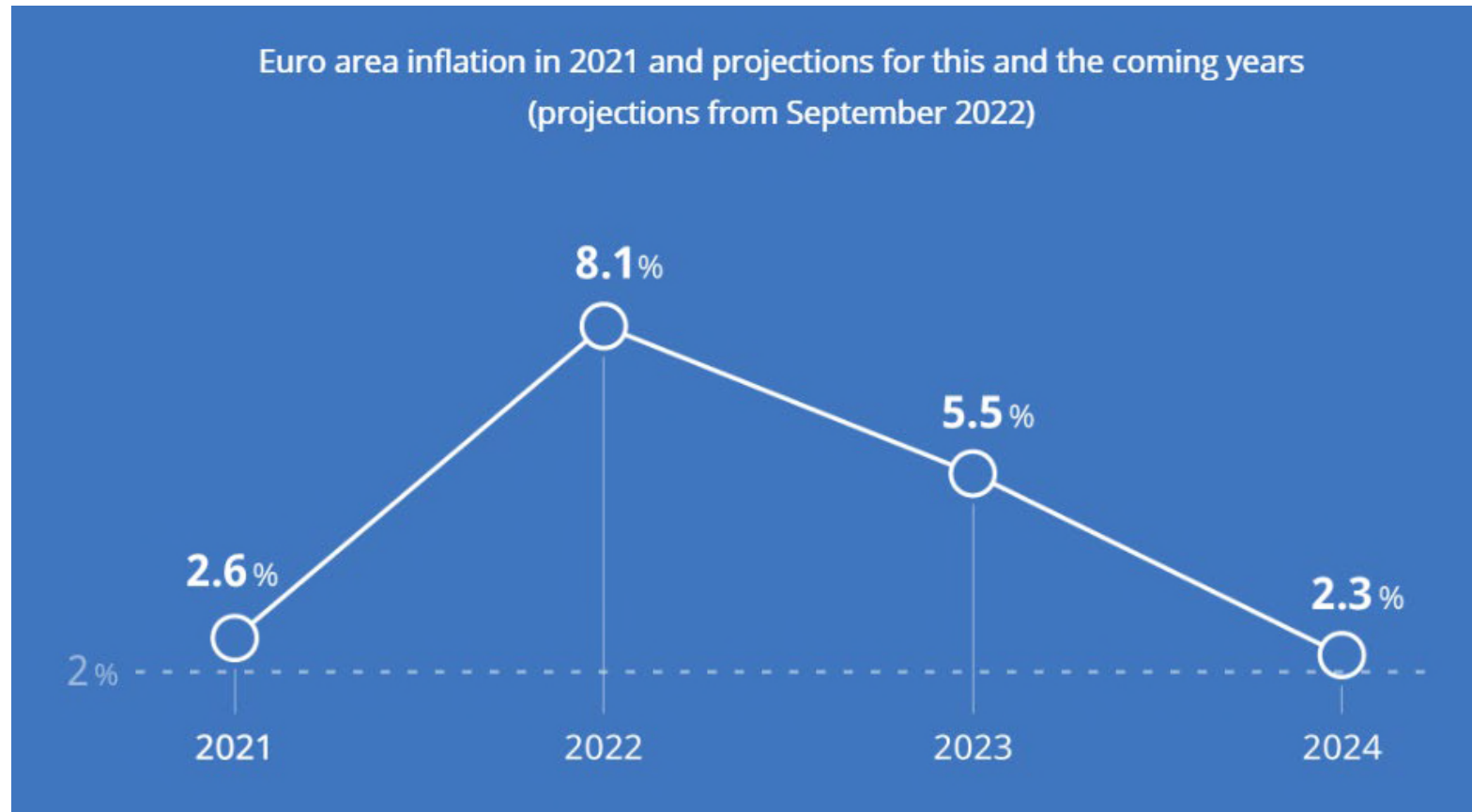
Effects on mean expected inflation: A close-up

	1Y	2-3Y	5-10Y
control group	6.15***	5.48***	4.40***
numerical			
'forecast'	−0.26**	−0.25**	−0.20**
'forecast revision'	−0.48***	−0.26*	−0.17*
visual			
'table'	−0.38***	−0.32***	−0.29***
'graph'	−0.61***	−0.56***	−0.54***
verbal			
'high rates'	0.05	0.17	0.06
'high rates + GC action'	−0.20*	0.00	−0.01
'GC control'	−0.77***	−0.30***	−0.26**
Observations	4756	4767	4756

Notes: Asterisks (***,** ,*) denote statistical significance at the 1,5, and 10% levels, respectively. All observations are weighted using survey weights. ▸ F-tests

Possible explanations for the treatment effects

Example: 'visual' information provision via 'graph'

Euro area inflation in 2021 and projections for this and the coming years
(projections from September 2022)

8.1%

5.5%

2.6%

2.3%

2%

2021   2022   2023   2024

❚Example: 'visual' information provision via 'graph'

Yields most consistent effects in lowering expectations across horizons

Possible Elements of success:

- Inclusion of 2021 realized inflation results in hump-shaped trajectory: signals timely return to initial levels (Binder and Rodrigue, 2018)

- Visuals easy to process: interacts with human visual system without frictions and at low computational cost (Franconeri et al., 1987; Larkin and Simon, 1987)

- Blue is ECB CI color: literature describes blue as trustworthy and pleasant (Valdez and Merabian, 1994; Su et al., 2019)

For communicating the outlook, "a picture is worth a thousand words"

❚ Example: 'verbal' information provision

When comparing verbal explanations, Schnabel's 'soothing' communication style produces large treatment effects, particularly for short-run

Possible Elements of success:

- Caring framing of speech avoids addressing negativity bias (Rozin and Royzman, 1991)

- Affects emotions positively:
  choice of words thus may make information more easily acceptable (Levine and Pizarro, 2004)

- Fewer numerical values to keep track of:
  avoids also addressing immanent inflation aversion (Ehrmann and Tzamourani, 2012)

For communicating the outlook, "words speak louder than numbers"

Further aspects

Attention to inflation developments:

- More than 70% of Wave 34 respondents monitor inflation more (47%) or as closely (30%) as usual

- Verbal communication (T7: GC control) is able to reach both attentive and less attentive respondents ▸ Attention

Learning about inflation outlook:

- Participants with above-projection prior revise/update to the downside, while below-projection priors are revised to the upside

Individual uncertainty is lowered by central bank communication about the outlook ▸ Uncertainty

Summing up

Conclusion and Outlook

Central bank communication can help guiding households' elevated inflation expectations back towards the target

- Has immediate effect via short-term expected inflation

- Helps adjusting in particular very high levels of expected inflation

- Contributes to reducing individual uncertainty

Some information provision formats appear to be particularly well-suited

- A soothingly framed communication generates stronger treatment effects than a rather 'number-oriented' explanation

- A simple graphical illustration yields most consistent effects in lowering expectations across all horizons

This suggests that central banks should **K**eep **I**t **S**ophisticatedly **S**imple