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Would Households Understand Average Inflation Targeting?

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Major central banks review their strategies

Effective communication crucial for managing inflation expectations

In August 2020 Federal Reserve System (Fed) updated its *Statement on Longer-Run Goals and Monetary Policy Strategy*

Fed introduced make-up strategy which seeks to achieve inflation that averages 2% over time

> *Our approach could be viewed as a flexible form of average inflation targeting. [This may imply that] following periods when inflation has been running persistently below 2%, appropriate monetary policy will likely aim to achieve inflation moderately above 2% for some time.*
> — Jerome Powell, August 2020

Make-up strategies in central bank practice

Make-up strategies — such as AIT — rely on inflation expectations acting as an automatic stabilizer

Practical experience is limited

– Price-level targeting in Sweden in the 1930s (Jonung, 1979, Berg and Jonung, 1999)

– Average inflation targeting in the US since 2020

For the US, Coibion et. al (2020)

– find no clear evidence that Fed's new monetary policy strategy made its way to the public

– observe information on AIT does not significantly alter US households' inflation expectations

What we are interested in

Would households understand average inflation targeting?

– How do households' medium- and longer-term inflation expectations differ under alternative monetary policy strategies?

– Would inflation expectations adjust symmetrically with current inflation above or below the target?

– How does trust in the CB impact inflation expectations under alternative monetary policy strategies?

– Would households' readiness to spend be affected?

▸ Readiness to spend

What we do

Randomized control trials in Bundesbank Online Panel Households (BOP-HH)

$\sim$ 9,000 respondents (October 2020, January and February 2021)

Probabilistic expectations

- for medium- (2-3Y) and longer-run (5-10Y) inflation
- under two monetary policy strategies: inflation targeting (IT) and hypothetical average inflation targeting (AIT)

Study the effects of

- hypothetical change in monetary policy strategy
- additional assumptions about 2021 inflation (at 1%, 3%)

Set-up of the randomized control trial

RCT stage 1

Infobox for all participants
- ECB's current strategy to aim at inflation rates close to, but below 2% in the medium term
- An alternative strategy, as currently practised by the Fed, to steer the inflation rate at 2% on average
Example that if inflation runs below the target, Fed will raise inflation above target for some time

RCT stage 2

RCT stage 3

‣ Questionnaire details

RCT stage 1

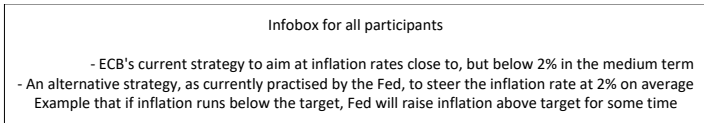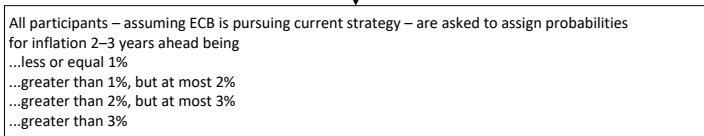| Infobox for all participants |
| --- |
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Example that if inflation runs below the target, Fed will raise inflation above target for some time |

RCT stage 2

All participants – assuming ECB is pursuing current strategy – are asked to assign probabilities for inflation 2–3 years ahead being ...less or equal 1% ...greater than 1%, but at most 2% ...greater than 2%, but at most 3% ...greater than 3%

RCT stage 3

▸ Questionnaire details

RCT stage 1

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>
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> ...less or equal 1%
> ...greater than 1%, but at most 2%
> ...greater than 2%, but at most 3%
> ...greater than 3%

RCT stage 3

| Group A: alternative strategy	Group B: current strategy; 2021 inflation at 1%	Group C: alternative strategy; 2021 inflation at 1%	Group D: current strategy; 2021 inflation at 3%	Group E: alternative strategy; 2021 inflation at 3%

Alternative strategy: "Assume now that the ECB, **in contrast to its current practice**, pursues an alternative strategy, which aims at reaching **2% inflation on average**"

▸ Questionnaire details

How would households' medium-term inflation expectations behave under different monetary policy strategies?

Inflation expectations 2-3 years ahead

RCT stage 2 vs stage 3 — Inflation expectations significantly higher under alternative strategy
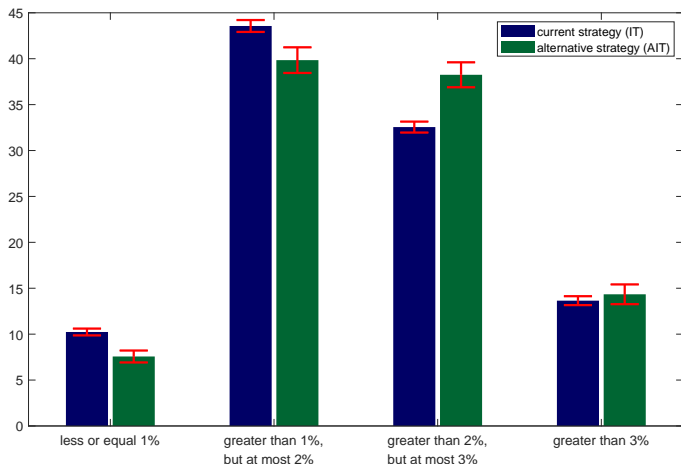

Standard errors of probabilities assigned to the corresponding intervals are reported in red

▸ Wave 10   ▸ Wave 14 longer run

To what extent do mean inflation expectations vary
with the monetary policy strategy?

Eliciting individuals' mean inflation expectations

Example: A continuous distribution is fitted to an individual's probabilistic assessment to obtain its mean inflation expectation
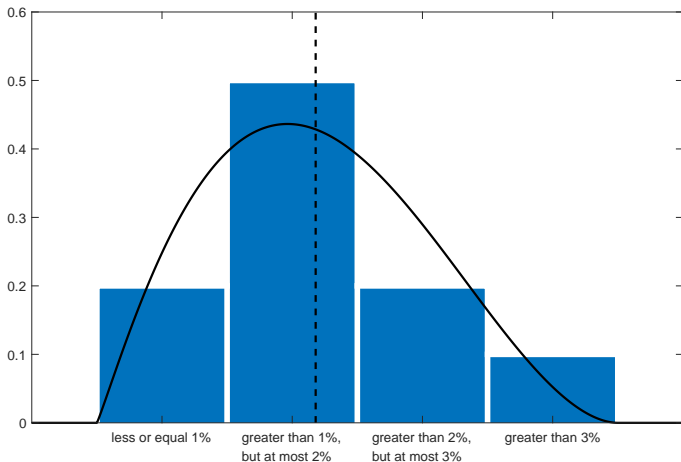
Mean inflation expectations 2-3 years ahead

RCT stage 2 vs stage 3 — Mean inflation expectations higher under alternative strategy
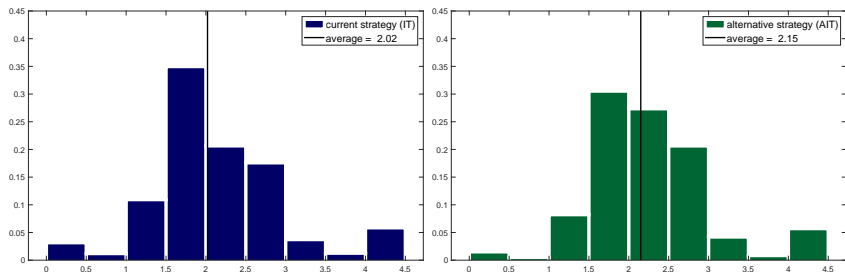
▸ Wave 10   ▸ Wave 14 longer run

Would households adjust their inflation expectations symmetrically above and below the target?
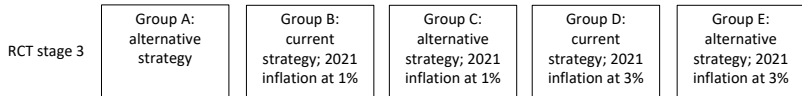
Symmetric adjustment of inflation expectations?

Statistical evidence suggests households understand how to adjust expectations under alternative strategy

In experiment, households receive information that if inflation runs below target, Fed will raise inflation above target for some time

Would households interpret the alternative strategy being symmetrically applied above the target as well as below the target?

We ask randomly sampled groups of respondents to report expected inflation 2-3 years ahead under different assumptions about 2021 inflation:

RCT stage 3	Group A: alternative strategy	Group B: current strategy; 2021 inflation at 1%	Group C: alternative strategy; 2021 inflation at 1%	Group D: current strategy; 2021 inflation at 3%	Group E: alternative strategy; 2021 inflation at 3%

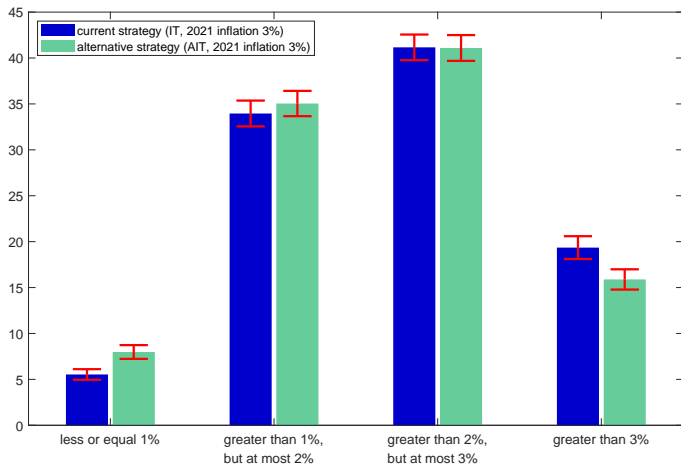# Inflation expectations 2-3 years ahead

Under AIT, shift of expected inflation towards *above* 2% when asked to assume 2021 inflation rate at 1%
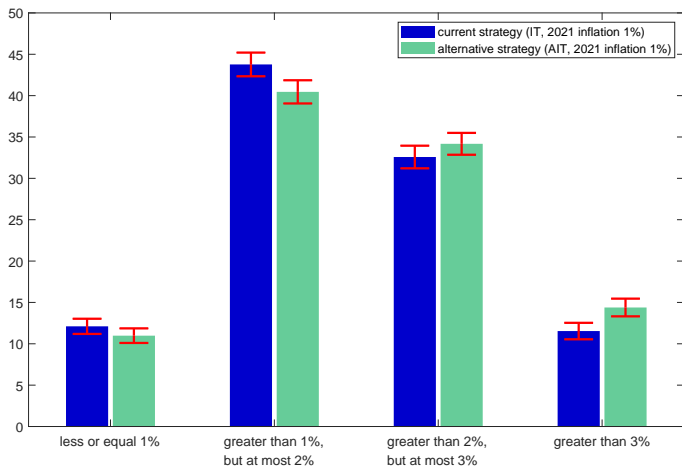
Standard errors of probabilities assigned to the corresponding intervals are reported in red

Inflation expectations 2-3 years ahead

Under AIT, shift of expected inflation to *below* 2% when asked to assume 2021 inflation rate at 3%. Yet, effect more muted

Standard errors of probabilities assigned to the corresponding intervals are reported in red

▸ Reactions in mean inflation expectations

Symmetric adjustment of inflation expectations?

Statistically significant difference of mean expectations between alternative and current strategy under assumption 2021 inflation at 1%

$$\text{mean}_i^{\text{s}} - \text{mean}_i^{\text{IT}} = \sum_s^S \delta_s d_{s,i} + u_i, \ s \in \{AIT, IT1\%, AIT1\%, IT3\%, AIT3\%\}$$

	October 2020		February 2021	
AIT1% − IT1%	0.21***	0.25***	0.12**	0.18**
AIT3% − IT3%			0.03	0.05
Observations	1903	1235	2970	1848
Adjusters only	No	Yes	No	Yes

Note: The variable $d_{s,i}$ is a dummy indicating whether or not a respondent is sampled into group with strategy s. For instance, $s = AIT$ refers to the alternative strategy, $s = IT1\%$ refers to current strategy assuming 2021 inflation is at 1%. Standard errors reported in parenthesis. Asterisks ***,**,* denote statistical significance at the 1,5, 10 % level, respectively. "Adjuster only" implies that respondents that have not changed their probabilistic assessments after treatment are deleted from the sample. Observations are weighted using sampling weights.

▸ Full table

How does trust in the ECB impact inflation expectations
under the current and alternative monetary policy strategies?

Central bank trust and inflation expectations

Central bank credibility important for anchoring of inflation expectations

Literature measures credibility by households' trust in central bank

- – We asked participants to what extent they trust ECB's ability of achieving price stability: [0 — no trust, 10 — full trust]

Respondents with high trust adjust inflation expectations

- – more strongly under the alternative compared to the current strategy

- – more strongly from below-target levels than from above-target levels of inflation

▸ Distribution of trust values   ▸ Other socio-demographic characteristics

Central bank trust and inflation expectations

$$\text{mean}_i^s - \text{mean}_i^{IT} = \sum_s^S \delta_s \, d_{s,i} + \sum_s^S \gamma_s \, d_{s,i} \times Trust_i + u_i$$

	2-3 y. ahead (February 2021)	
AIT1% − IT1%		
at 10%-Quantile	0.08	0.14
at 50%-Quantile	0.16***	0.22***
at 90%-Quantile	0.22**	0.28***
AIT3% − IT3%		
at 10%-Quantile	0.14***	0.20***
at 50%-Quantile	0.02***	0.08***
at 90%-Quantile	−0.07***	−0.01***
Observations	2957	1841
Adjusters only	No	Yes

Note: The variable $d_{s,i}$ is a dummy indicating whether or not a respondent is sampled into group with strategy s. For instance, $s = AIT$ refers to the alternative strategy, $s = IT1\%$ refers to current strategy assuming 2021 inflation is at 1%. Standard errors reported in parenthesis. Asterisks ***,** ,* denote statistical significance at the 1,5, 10 % level, respectively. "Adjuster only" implies that respondents that have not changed their probabilistic assessments after treatment are deleted from the sample. Observations are weighted using sampling weights.

▸ Full table

Are the differences in inflation expectations economically significant?

Assessing the economic significance

Benefits of AIT arise from stabilizing effects on inflation expectations

We find such effects in survey experiment. To analyze their economic significance, we compare two model economies

In both economies, the expectations channel is mitigated through borrowing/lending constraints for fraction of HHs and backward-looking price setting for fraction of firms

- Compare economy with an IT rule with one where the CB implements AIT
- Simulate both economies starting 1% below π^*, calibrate difference of 2-3 year ahead expected inflation to match survey evidence
- **Inflation six times less volatile under AIT than IT. Occurrence of ZLB episodes 4.5% under IT vs 0% under AIT**

Preview Wave 20 — The new ECB inflation target

Preview – The new ECB inflation target

The European Central Bank (ECB) has recently concluded its framework review

New price stability objective:

> The Governing Council considers that price stability is best maintained by aiming for a 2% inflation target over the medium term. This target is *symmetric*, meaning negative and positive deviations of inflation from the target are equally undesirable [. . .] *This may also imply a transitory period in which inflation is moderately above target.*
>
> Are we doing average inflation targeting like the Fed? The answer is no, very squarely, because there are multiple ways to respond to this effective lower bound constraint.
> — Christine Lagarde, July 8, 2021

Preview — The new ECB inflation target

"Close to but below 2%" VS. "Symmetrical at 2%": Full information about potential inflation overshooting makes the difference
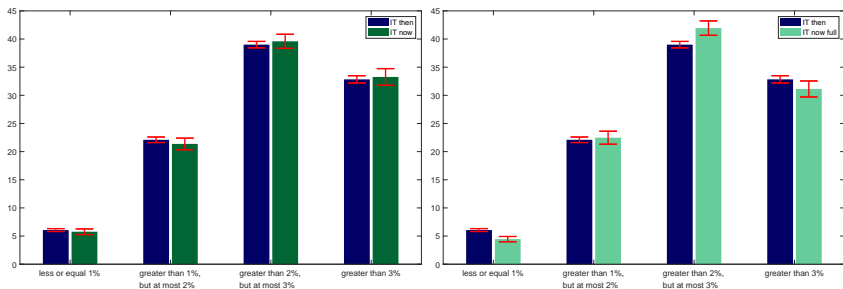
▸ Wave 20 questionnaire details

Summary

AIT can be a successfull MP strategy, if agents understand it

Our survey evidence suggests households have higher inflation expectations under hypothetical AIT strategy

- – Adjustment towards inflation target from below and above target, although latter effect attenuated

- – Under AIT, individuals with higher trust in ECB adjust inflation expectations more strongly than under IT

- – Model-based investigation suggests survey-based differences in mean inflation expectations economically significant