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The effects of the ECB's new inflation target on households' inflation expectations

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The ECB's new inflation target

Under its previous regime, the ECB aimed for an annual inflation rate close to, but below 2%

In July 2021, the ECB adopted a new strategy of targeting an inflation rate of 2% over the medium term

> [. . .] *This target is symmetric, meaning negative and positive deviations from target are equally undesirable.*

Furthermore, ECB signaled an increased tolerance for inflation overshooting the target to avoid more persistent deflationary trends

> [. . .] *it requires especially forceful or persistent monetary policy action to avoid negative deviations from becoming entrenched. This may also imply a transitory period in which inflation is moderately above target.*

> — ECB Governing Council, 8 July 2021

Central banks' regime changes and the public

Central banks' regime changes are rare, therefore scarce empirical evidence on how these changes are perceived by the general public

- Coibion et al. (2021) show that the announcement of flexible average inflation targeting (AIT) in 2020 remained largely unnoticed by US HHs

- Hoffmann et al. (2022) find that HHs adjust expectations in the direction predicted by theory in the context of a *hypothetical* strategy akin to AIT
  - ➢ treatment effect more pronounced for respondents with higher trust in the ECB to deliver on its price stability mandate

- Kostyshyna et al. (2021) find that participants have greater difficulty understanding history-dependent monetary policy regimes
  - ➢ results are obtained within an experimental set-up

What we do

Investigate the effects of the ECB's new symmetric inflation target on HHs' inflation expectations

— ask people whether they are aware of the change in the ECB's strategy

— provide respondents with information about the new strategy and analyze if and how they incorporate it into their inflation expectations

— compare whether respondents adjust expectations symmetrically towards the target when near-term inflation is above or below target

What we find

Ask people whether they are aware of the change in ECB's strategy

— about one-third of the sample reported to have heard about the regime change in October 2021

— nearly 60% of those have heard about an increased tolerance for overshooting by the ECB

— almost half of them are able to identify the target correctly

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Provide respondents with information about the new strategy and analyze if and how they incorporate it into their inflation expectations

— in general, little difference between expected inflation under the previous and new regime

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Provide respondents with information about the new strategy and analyze if and how they incorporate it into their inflation expectations

— in general, little difference between expected inflation under the previous and new regime

Compare whether respondents adjust expectations symmetrically when near-term inflation is above or below target

— assuming negative deviations from target, respondents expect higher medium-term inflation under the new strategy

Information provision experiment

RCT embeded in BOP-HH waves August and October 2021

— collected over 7,500 individual responses

— probabilistic assessment of medium-term inflation:

  In your opinion, how likely is it that the rate of inflation will change as follows over the next two to three years? The rate of inflation will be

  ➢ *at most 1%*
  ➢ *between 1 and 2%*
  ➢ *between 2 and 3%*
  ➢ *over 3%?*

— respondents are informed about the new target using different parts of the ECB governing council statement from July 2021

— additionally, different assumptions about the current inflation rate

RCT design

Stage 1

All participants receive basic information about the previous, `close-to-but-below-2%' inflation target of the ECB and the new, symmetric inflation target at 2%

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All participants receive basic information about the previous, `close-to-but-below-2%' inflation target of the ECB and the new, symmetric inflation target at 2%

Stage 2

Elicit probabilistic expectations of inflation over the medium run under the `close-to-but-below-2%' regime, no assumptions on near-term inflation
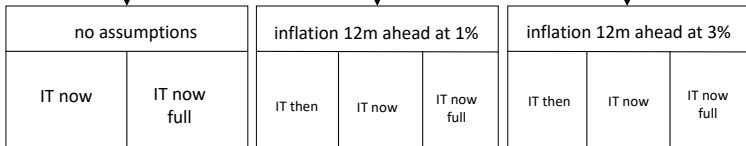
▸ Stage 2

RCT design

Stage 1: All participants receive basic information about the previous, `close-to-but-below-2%' inflation target of the ECB and the new, symmetric inflation target at 2%

Stage 2: Elicit probabilistic expectations of inflation over the medium run under the `close-to-but-below-2%' regime, no assumptions on near-term inflation

Stage 3:

| no assumptions		inflation 12m ahead at 1%			inflation 12m ahead at 3%		
IT now	IT now full	IT then	IT now	IT now full	IT then	IT now	IT now full

Stage 3

[. . .] This target is symmetric, meaning negative and positive deviations from target are equally undesirable. [. . .]

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# Unconditional distributions

Medium-term inflation expectations remain largely unaffected by the adoption of the new target

inflation expectations 2-3 years ahead
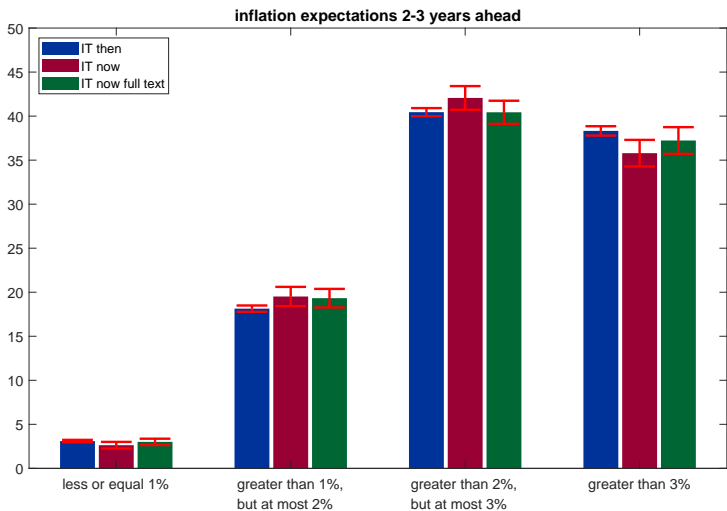
Assuming inflation at 1% in the near term

Under the previous 'close-to-but-below-2%' target, reported subjective
probability mass shifts towards lower expected inflation outcomes

inflation expectations 2-3 years ahead
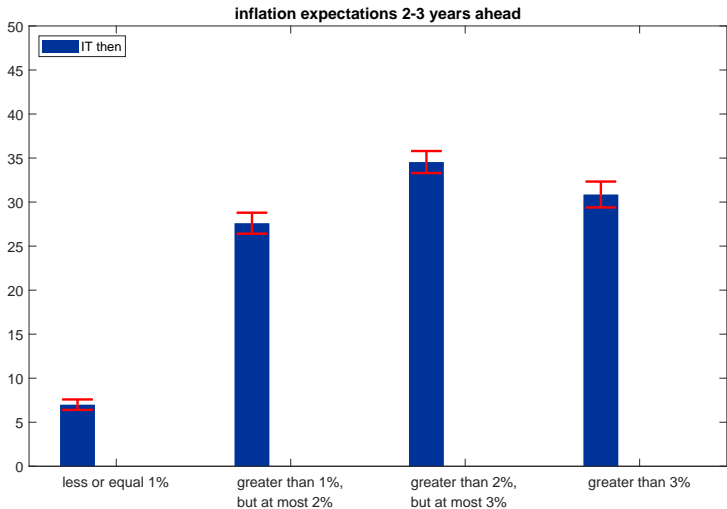
Assuming inflation at 1% in the near term

HHs report significantly higher expected inflation under the new regime

inflation expectations 2-3 years ahead
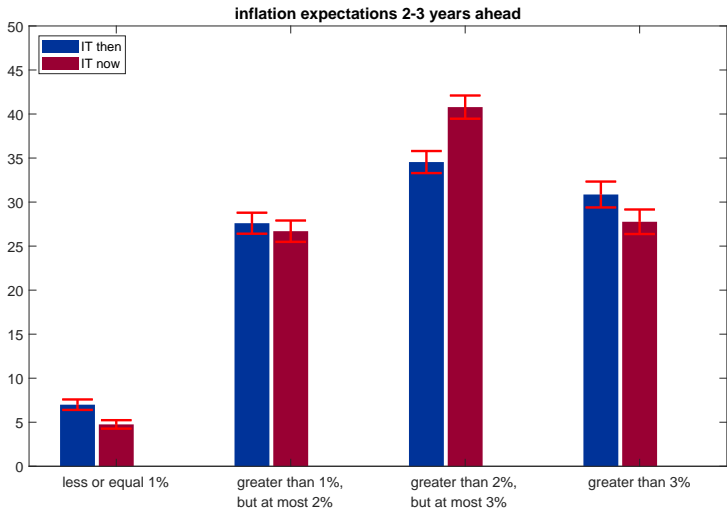
Assuming inflation at 1% in the near term

Individuals treated with the full text about the new target of the ECB display the highest expectations

inflation expectations 2-3 years ahead
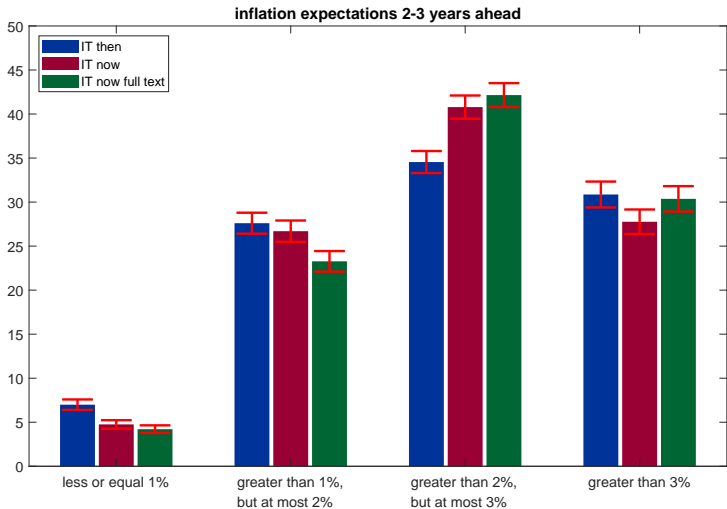
Assuming inflation at 3% in the near term

Participants do not expect a significant undershooting in the medium term

Results using HHs mean inflation expectations

Conditional on negative deviatons from target in the near term, survey participants report up to 26bp higher expected inflation on average

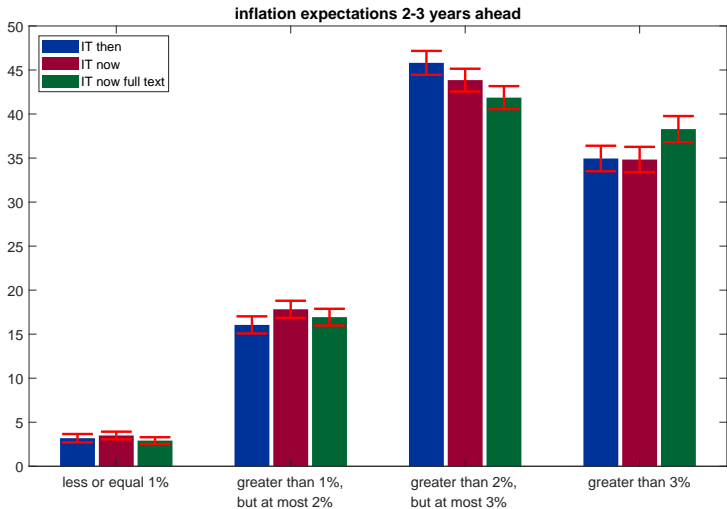|	$\text{mean}_i^s - \text{mean}_i^{IT} = \sum_s^S \delta_s d_{s,i} + u_i$			
(inflation at 1%)				
IT now − IT then	−0.01	−0.05	−0.06	−0.03
IT now full − IT then	0.08***	0.07*	0.19***	0.23*
IT now full − IT now	0.09***	0.12***	0.25***	0.26***
(inflation at 3%)				
IT now − IT then	0.00	−0.05	0.01	−0.06
IT now full − IT then	0.04	0.01	0.10*	0.04
IT now full − IT now	0.04**	0.06	0.09*	0.10
Observations	5032	1583	2953	927
Adjusters only	No	No	Yes	Yes
Aware of new ECB Strategy	No	Yes	No	Yes

All observations are weighted using survey weights. We control for outliers using Huber weighted regressions. Label 'Adjusters only' refers to respondents who reported changed probabilites after receiving information treatment.

***,**,* denotes statistical significance at 1,5, 10 % levels. ▶ Full table

Conclusion and outlook

Central bank communication is a powerful tool to steer expectations

Under the new symmetric target the unconditional inflation expectations of HHs remain essentially the same

Assuming inflation below the target rate of 2% in the near term

— HHs' medium-run expectations adjust in line with the mechanism communicated in the ECB statement

— Magnitude of effect can vary depending on the level of trust in the central bank and informedness about the new strategy

Not shown today: Inflation expectations as automatic stabilizers

— increased probability of higher inflation outcomes prompts people to spend more on durables

Appendix

Stage 1

We would now like to ask you for your views on the monetary policy of the European Central Bank outlined above.

The European Central Bank (ECB) has adopted a new monetary policy strategy. As before, the primary objective of the ECB is to maintain price stability.

The ECB **previously** considered this target to be achieved if the annual rate of inflation was **below, but close to 2%**, over the medium term.

It now considers that price stability is best maintained by aiming for **a 2% inflation over the medium term**. This target is symmetric, meaning that negative and positive deviations of inflation from the target are equally undesirable.

▸Back

Stage 2

P2204 | 2020_001 | ECB former monetary policy | ecbitthen_[a-d]

Assume that **the ECB, as it had until now,** is aiming for an annual inflation rate that is **below, but close to, 2% over the medium term**.

Question: In your opinion, how likely is it that the rate of inflation will change as follows <u>over the next two to three years</u>?

The rate of inflation will …

Note: The aim of this question is to determine how likely you think it is that something specific will happen in the future. You can rate the likelihood on a scale from 0 to 100, with 0 meaning that an event is completely unlikely and 100 meaning that you are absolutely certain it will happen. Use values between the two extremes to moderate the strength of your opinion. Please note that your answers to the categories have to add up to 100.

a   not exceed 1%.
b   be above 1%, but not exceed 2%.
c   be above 2%, but not exceed 3%.
d   be above 3%.

Stage 3

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Regression results

	$\text{mean}_i^s - \text{mean}_i^{lT} = \sum_s^S \delta_s d_{s,i} + u_i$				
IT now	−0.02	−0.03*	−0.11**	−0.02	−0.04
	(0.03)	(0.02)	(0.04)	(0.03)	(0.08)
IT now full	0.06*	0.00	−0.01	−0.01	−0.05
	(0.03)	(0.02)	(0.04)	(0.03)	(0.08)
IT then 1%	−0.25***	−0.18***	−0.44***	−0.16***	−0.44***
	(0.03)	(0.02)	(0.04)	(0.03)	(0.07)
IT now 1%	−0.34***	−0.19***	−0.50***	−0.21***	−0.47***
	(0.03)	(0.02)	(0.04)	(0.03)	(0.06)
IT now full 1%	−0.17***	−0.10***	−0.25***	−0.09***	−0.21***
	(0.03)	(0.02)	(0.04)	(0.03)	(0.08)
IT then 3%	−0.04	−0.01	−0.04	0.02	0.01
	(0.03)	(0.02)	(0.04)	(0.03)	(0.07)
IT now 3%	−0.05*	−0.01	−0.03	−0.03	−0.05
	(0.03)	(0.02)	(0.04)	(0.03)	(0.07)
IT now full 3%	0.03	0.03*	0.06	0.03	0.05
	(0.03)	(0.01)	(0.04)	(0.03)	(0.07)
IT now full − IT now	0.08	0.03	0.10	0.01	−0.01
Observations	5032	5032	2953	1583	927
Huber weights	No	Yes	Yes	Yes	Yes
Adjusters only	No	No	No	No	Yes
Aware of new ECB Strategy	No	No	No	Yes	Yes

Standard errors reported in parenthesis. ***,**,* denotes statistically significant difference at 1,5, 10 % levels.
Observations are weighted using survey weights.

‣ Back

Further robustness checks

➢ Trust in the central bank

➢ Controlling for demographic characteristics

➢ Heterogeneity of treatment effects

➢ Controlling for panel conditioning

	$\text{mean}_i^s - \text{mean}_i^{lT} = \sum_s^S \delta_s d_{s,i} + \sum_s^S \gamma_s d_{s,i} \times \text{Trust}_i + u_i$				
IT now 1% − IT then 1%					
at the 10% quantile	−0.13	−0.04	−0.19*	−0.18**	−0.42**
at the 50% quantile	−0.13**	−0.04	−0.11	0.02	−0.02
at the 90% quantile	−0.13	−0.04	−0.05	0.14	0.22
IT now full 1% − IT then 1%					
at the 10% quantile	0.00	0.00	0.14	−0.06	0.04
at the 50% quantile	0.10*	0.10***	0.22***	0.14**	0.29**
at the 90% quantile	0.16*	0.16***	0.28***	0.26***	0.44**
IT now full 1% − IT now 1%					
at the 10% quantile	0.13	0.04	0.33***	0.12	0.46**
at the 50% quantile	0.23***	0.14***	0.33***	0.12**	0.31***
at the 90% quantile	0.29***	0.20***	0.33***	0.12	0.22
IT now 3% − IT then 3%					
at the 10% quantile	0.02	0.00	0.00	−0.09	−0.17
at the 50% quantile	−0.03	0.00	0.00	−0.04	−0.07
at the 90% quantile	−0.06	0.00	0.00	−0.01	−0.01
IT now full 3% − IT then 3%					
at the 10% quantile	.0.09	0.07	0.16*	−0.06	−0.26
at the 50% quantile	0.04	0.02	0.08	0.04	0.09
at the 90% quantile	0.01	−0.01	0.02	0.10	0.30*
IT now full 3% − IT now 3%					
at the 10% quantile	0.07	0.07	0.16	0.03	−0.09
at the 50% quantile	0.07*	0.02*	0.08*	0.08	0.16
at the 90% quantile	0.07	−0.01	0.02	0.11	0.31*
Observations	4993	4993	2933	1583	927
Huber weights	No	Yes	Yes	Yes	Yes
Adjusters only	No	No	Yes	No	Yes
Aware of new ECB Strategy	No	No	No	Yes	Yes

Robustness II: Demographic controls

	$\text{mean}_i^s - \text{mean}_i^{IT} = \sum_s^S \delta_s d_{s,i} + X\gamma + u_i$			
IT now − IT then	0.02	−0.08	−0.18**	−0.32*
IT now full − IT then	0.05	0.07	−0.18**	−0.31
IT now full − IT now	0.03	0.15**	0.00	0.01
IT now 1% − IT then 1%	0.02	0.05	−0.01	0.05
IT now full 1% − IT then 1%	0.06**	0.16**	0.06	0.22
IT now full 1% − IT now 1%	0.04	0.11	0.07	0.17
IT now 3% − IT then 3%	−0.01	−0.01	−0.05	−0.12
IT now full 3% − IT then 3%	0.00	0.00	−0.03	−0.16
IT now full 3% − IT now 3%	0.01	0.01	0.02	−0.04
Observations	4602	2683	1444	838
Adjusters	No	Yes	No	Yes
Aware of new ECB target	No	No	Yes	Yes

All observations are weighted using survey weights. We control for the presense of outliers using Huber weighted regressions. Label 'Adjusters' refers to respondents who reported changed probabilities after receiving information treatment. We further control for demographic characteristics such as age, income, education, etc.

Robustness III: Heterogeneity

— Respondents with high school degree (Abitur) and higher-income respondents react more strongly to CB communication, given expected negative deviations from target

— Magnitude of effect roughly comparable for people with and without college degree

— In contrast with baseline results, people born in East Germany pre 1990, do not react to CB communication assuming negative deviations, but do reduce expectations given positive deviations from target by about 14bp

— Given a 1% current inflation, non-females adjust expectations upwards more strongly than females. Females do not expect an undershooting of the target in the medium term given postive deviations in the short term

Refresher				
IT now − IT then	0.00	−0.05	−0.03	−0.11
IT now full − IT then	−0.03	−0.1	−0.07	−0.24*
IT now full − IT now	−0.03	−0.05	−0.04	−0.13
IT now 1% − IT then 1%	−0.02	−0.19**	−0.03	−0.05
IT now full 1% − IT then 1%	0.10***	0.16*	0.08	−0.06
IT now full 1% − IT now 1%	0.12***	0.35***	0.11	−0.01
IT now 3% − IT then 3%	−0.01	0.00	0.03	0.04
IT now full 3% − IT then 3%	−0.04	−0.12	−0.10	−0.11
IT now full 3% − IT now 3%	−0.03	−0.12	−0.13*	−0.15
	1882	1147	634	397
Panel				
IT now − IT then	−0.04**	−0.15**	−0.01	0.04
IT now full − IT then	0.02	0.05	0.04	0.14
IT now full − IT now	0.06*	0.20**	0.05	0.10
IT now 1% − IT then 1%	−0.01	0.04	−0.05	−0.03
IT now full 1% − IT then 1%	0.05**	0.23***	0.08	0.37***
IT now full 1% − IT now 1%	0.06**	0.19***	0.13**	0.40***
IT now 3% − IT then 3%	−0.01	0.00	−0.09	−0.17
IT now full 3% − IT then 3%	0.09***	0.27***	0.07	0.20
IT now full 3% − IT now 3%	0.10***	0.27***	0.16***	0.37**
	3150	1806	949	530
Adjusters	No	Yes	No	Yes
Aware of new ECB target	No	No	Yes	Yes

$$d_i^{respond} = \alpha + \beta mean_i^{pre} + X\gamma + \varepsilon_i$$

	(1)	(2)		(1)	(2)
Mean pre-treat	−0.07*** (0.02)		east1989	0.01 (0.03)	0.01 (0.03)
ecbtrust=1	0.08 (0.06)	0.11* (0.06)	Female	0.02 (0.02)	0.02 (0.02)
ecbtrust=2	0.19*** (0.05)	0.20*** (0.05)	Age 40 to 60	-0.03 (0.03)	-0.04 (0.03)
ecbtrust=3	0.13*** (0.04)	0.16*** (0.04)	Age over 60	-0.05 (0.04)	-0.06 (0.04)
ecbtrust=4	0.21*** (0.05)	0.24*** (0.05)	Income 1500 to 3000	0.01 (0.05)	0.01 (0.05)
ecbtrust=5	0.11** (0.04)	0.16*** (0.04)	Income 3000 to 5000	-0.00 (0.05)	-0.00 (0.05)
ecbtrust=6	0.24*** (0.04)	0.29*** (0.04)	Income over 5000	-0.01 (0.05)	-0.01 (0.06)
ecbtrust=7	0.14*** (0.04)	0.20*** (0.04)	HH size (two)	0.01 (0.03)	0.01 (0.03)
ecbtrust=8	0.18*** (0.05)	0.24*** (0.05)	HH size (three)	0.00 (0.04)	-0.00 (0.04)
ecbtrust=9	0.15* (0.08)	0.22*** (0.08)	HH size (over)	0.00 (0.04)	0.01 (0.04)
ecbtrust=10	0.23*** (0.08)	0.31*** (0.07)	Employed	0.00 (0.03)	0.00 (0.03)
ecb_awareness_mp	0.02 (0.02)	0.01 (0.02)	College degree	0.03 (0.03)	0.03 (0.03)
			High school degree	0.04 (0.03)	0.05* (0.03)
Observations	4565	4565			

Spending intentions

	$y_i^{post} = 1$: HH i reports it is good time to buy		
Median post-treat	−0.01	0.00	0.01
	(0.07)	(0.07)	(0.10)
IQR post-treat	0.05**	0.02	0.03
	(0.02)	(0.03)	(0.03)
p^5 (residuals)	−0.16**	−0.17**	−0.01
	(0.06)	(0.08)	(0.12)
p^{95} (residuals)	0.17**	0.20**	0.00
	(0.07)	(0.09)	(0.12)
Observations	4603	2695	1443
Adjusters only	No	Yes	No
Aware of new ECB strategy	No	No	Yes

In a probit set-up similar to Ryngaert (2022), we regress the reported readiness to spend y_i^{post} on the median, IQR and the 5-th and 95-th percentile of the reported distribution, post-treatment. We include a rich set of socio-demographic controls.