Reactions of household inflation expectations to a symmetric inflation target and high inflation

Galati, Moessner and van Rooj

Discussion by Sylvérie Herbert
Banque de France

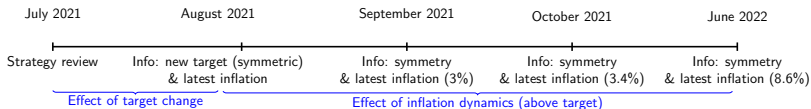*ESCB Research Cluster*
October 2022

*Views are my own and do not represent the position of the Banque de France or the Eurosystem.

How do households form expectations ?

- This paper studies 2 aspects of expectations formation:
    - How **central bank communication about its target** affects expectations: target announcement can anchor expectations if the central bank is credible
    - Response to information about the macroeconomy such as **inflation developments**
- Methodology: randomized control experiment with monthly survey of Dutch households about short-term (1 year) and long-term (10 years) expectations, 1 treated (information) and 1 control group (without information)

How do households form expectations ?

▶ This paper studies 2 aspects of expectations formation:

  ▶ How **central bank communication about its target** affects expectations: target announcement can anchor expectations if the central bank is credible
  ▶ Response to information about the macroeconomy such as **inflation developments**

▶ Methodology: randomized control experiment with monthly survey of Dutch households about short-term (1 year) and long-term (10 years) expectations, 1 treated (information) and 1 control group (without information)

July 2021	August 2021	September 2021	October 2021	June 2022
Strategy review	Info: new target (symmetric) & latest inflation	Info: symmetry & latest inflation (3%)	Info: symmetry & latest inflation (3.4%)	Info: symmetry & latest inflation (8.6%)

Effect of target change

Effect of inflation dynamics (above target)

Key take aways

1. Zero effect of target announcement on short and long-term inflation expectations

2. Both short and long-term inflation expectations increased after inflation increased (for both treated and non-treated), even more so during above-target inflation periods

3. Potential risk of de-anchoring: increase in households probability of inflation above 4% (for both treated and non-treated) in response to lagged inflation and during periods of high inflation

No or small effect of symmetric target announcement

Table 1: Direct effect of strategy revision on household inflation expectations

	(1)	(2)	(3)	(4)
Sample		info		info
	control	treatment	control	treatment
	group	group	group	group
Dependent variable	π^{LT}	π^{LT}	π^{ST}	π^{ST}
Strategy revision dummy	-0.30***	-0.27***	-0.29***	-0.26***
(August '21 survey)	(-10.0)	(-9.3)	(-11.3)	(-11.3)
Intercept	5.64***	4.78***	3.35***	2.93***
	(38.0)	(40.0)	(55.1)	(59.5)
No. of observations	18055	19488	18163	19688
No. of groups	837	861	839	865

▶ Counterintuitive result that short-term expectations decrease

▶ Potential explanation includes **macroeconomic outcomes**: does controlling for unemployment, inflation, uncertainty, forecasts give the same result? Can we discard any **information effect**?

▶ It may take time for agents to understand or **trust** the central is actually willing to deviate from target so the effect may be lagged?

▶ Alternative dependent variable: absolute distance from target

Attention to high inflation

Table 6: Inflation expectations vs. actual inflation and strategy revision dummy

	(1)	(2)	(3)	(4)
Sample		info		info
	control	treatment	control	treatment
	group	group	group	group
Dependent variable	π^{LT}	π^{LT}	π^{ST}	π^{ST}
Strategy revision dummy	-0.27***	-0.19***	0.04*	0.05*
(August '21 survey)	(-5.3)	(-5.3)	(2.1)	(2.5)
Lagged actual inflation	0.33***	0.33***	0.07**	0.21***
	(5.3)	(7.4)	(3.3)	(10.2)
Lagged actual inflation *	0.21**	0.16**	0.84***	0.57***
high Inflation dummy	(2.8)	(3.1)	(19.3)	(17.9)
High inflation dummy	-1.54***	-1.00***	-2.28***	-1.61***
(Sept '21 – June '22)	(-9.5)	(-7.9)	(-16.9)	(-16.2)
Intercept	4.69***	3.77***	2.41***	1.84***
	(33.5)	(36.1)	(41.6)	(39.3)
No. of observations	17654	19259	17759	19455
No. of groups	736	805	739	808

Attention to high inflation

Table 6: Inflation expectations vs. actual inflation and strategy revision dummy

	(1)	(2)	(3)	(4)
Sample		info		info
	control	treatment	control	treatment
	group	group	group	group
Dependent variable	π^{LT}	π^{LT}	π^{ST}	π^{ST}
Strategy revision dummy	-0.27***	-0.19***	0.04*	0.05*
(August '21 survey)	(-5.3)	(-5.3)	(2.1)	(2.5)
Lagged actual inflation	0.33***	0.33***	0.07**	0.21***
	(5.3)	(7.4)	(3.3)	(10.2)
Lagged actual inflation *	0.21**	0.16**	0.84***	0.57***
high Inflation dummy	(2.8)	(3.1)	(19.3)	(17.9)
High inflation dummy	-1.54***	-1.00***	-2.28***	-1.61***
(Sept '21 – June '22)	(-9.5)	(-7.9)	(-16.9)	(-16.2)
Intercept	4.69***	3.77***	2.41***	1.84***
	(33.5)	(36.1)	(41.6)	(39.3)
No. of observations	17654	19259	17759	19455
No. of groups	736	805	739	808

Attention to high inflation

Table 6: Inflation expectations vs. actual inflation and strategy revision dummy

	(1)	(2)	(3)	(4)
Sample		info		info
	control	treatment	control	treatment
	group	group	group	group
Dependent variable	π^{LT}	π^{LT}	π^{ST}	π^{ST}
Strategy revision dummy	-0.27***	-0.19***	0.04*	0.05*
(August '21 survey)	(-5.3)	(-5.3)	(2.1)	(2.5)
Lagged actual inflation	0.33***	0.33***	0.07**	0.21***
	(5.3)	(7.4)	(3.3)	(10.2)
Lagged actual inflation *	0.21**	0.16**	0.84***	0.57***
high Inflation dummy	(2.8)	(3.1)	(19.3)	(17.9)
High inflation dummy	-1.54***	-1.00***	-2.28***	-1.61***
(Sept '21 – June '22)	(-9.5)	(-7.9)	(-16.9)	(-16.2)
Intercept	4.69***	3.77***	2.41***	1.84***
	(33.5)	(36.1)	(41.6)	(39.3)
No. of observations	17654	19259	17759	19455
No. of groups	736	805	739	808

▶ Both treated and non-treated affected the same way: attention to inflation when high and volatile

▶ Consistent with theory of rational inattention: pay attention to inflation when volatile and it would be costly not to

▶ Check for **non-linearity**: squared lagged inflation, or different thresholds to find when households start paying attention to inflation

Attention to high inflation

Table 6: Inflation expectations vs. actual inflation and strategy revision dummy

	(1)	(2)	(3)	(4)
Sample	info	info	info	info
	control group	treatment group	control group	treatment group
Dependent variable	π^{LT}	π^{LT}	π^{ST}	π^{ST}
Strategy revision dummy	-0.27***	-0.19***	0.04*	0.05*
(August '21 survey)	(-5.3)	(-5.3)	(2.1)	(2.5)
Lagged actual inflation	0.33***	0.33***	0.07**	0.21***
	(5.3)	(7.4)	(3.3)	(10.2)
Lagged actual inflation *	0.21**	0.16**	0.84***	0.57***
high Inflation dummy	(2.8)	(3.1)	(19.3)	(17.9)
High inflation dummy	-1.54***	-1.00***	-2.28***	-1.61***
(Sept '21 – June '22)	(-9.5)	(-7.9)	(-16.9)	(-16.2)
Intercept	4.69***	3.77***	2.41***	1.84***
	(33.5)	(36.1)	(41.6)	(39.3)
No. of observations	17654	19259	17759	19455
No. of groups	736	805	739	808

- ▶ Endogenous gain learning model implies higher loading if higher forecast error (e.g., Gati 2022), possible to leverage the panel dimension of the survey?

- ▶ Check for **asymmetry in responses**: positive vs negative surprises

- ▶ Do we observe lower disagreement across households? Lower variance at the household level?

De-anchoring

Table 9: Expected probability of high inflation explained by actual inflation

	(1)	(2)	(3)	(4)
Sample		info		info
	control group	treatment group	control group	treatment group
Dependent variable	$Pr\_high\_\pi^{LT}$	$Pr\_high\_\pi^{LT}$	$Pr\_high\_\pi^{ST}$	$Pr\_high\_\pi^{ST}$
Lagged actual inflation	0.35	0.28	0.16	0.38**
	(0.8)	(0.9)	(0.7)	(2.8)
Lagged actual inflation * high inflation dummy	2.41***	2.38***	8.47***	9.43***
	(4.5)	(5.0)	(15.0)	(19.8)
High inflation dummy (Sept '21 – June '22)	-3.83**	-3.80**	-16.17***	-18.61***
	(-2.7)	(-2.9)	(-9.6)	(-11.4)
Intercept	26.97***	14.87***	7.92***	4.01***
	(19.2)	(18.4)	(15.9)	(15.8)
No. of observations	5879	6383	5892	6397
No. of groups	631	683	631	683

- ▶ Previous results unveil whether households view inflation as a transitory phenomenon or a permanent development
- ▶ Higher probability of anticipated high inflation: shift of distribution? Skewness?
- ▶ Definitions of anchoring: level (target) vs how LT expectations respond to shocks. Do we observe a co-movement between revisions in LT expectations and corresponding revisions in short-run expectations?

Concluding remarks

▶ Key paper as it is crucial for central banks to understand how expectations are formed, as drivers of inflation

▶ This paper can answer a lot of questions about how target announcements and backward information affect expectations both in the short and long-term: very rich data set and very well executed analysis!

▶ Results can inform theories of expectation formation, data can provide us maybe even more answers about the mechanisms

▶ How about **forward-looking information**? E.g., Armantier et al. (2022) look at future inflation surprises, Hoffman et al. (2022) with ECB projections

Thank you!