

Inflation Expectations as Public Opinion?

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Introduction

- Citizens have limited knowledge about the economy, especially monetary policy (Bearce, 2003)
e.g. only 53% of people in G20 countries know what happens to the purchasing power of money if inflation stays the same (OECD INFE, 2016).
- Yet, economic outcomes, like inflation, depend on collective beliefs and expectations (Bernanke 2007, Bodea and Hicks, 2015, Bachmann et al. 2015)

Research Questions

- How do citizens learn about inflation?
- How effective is the dissemination of public information about monetary policy in moving peoples' economic expectations?
- How do political predispositions matter for the adoption of monetary policy information (if at all)?

Combining two approaches

- **Bayesians:** Economic aggregates, like inflation, are calculated statistics
 - ▶ Posterior is (weighted) average between prior beliefs and new information
- **Public Opinion:** Weight of prior is dependent on political predispositions and public opinions as well as economic factors

Summary of Results

- ▶ Our innovation is examining the link between inflation expectations and information processing using 2 waves of vignette experiments
- ▶ We find more precise information lowers the weight of prior beliefs more than vague information
- ▶ We find that short precise texts are most effective
- ▶ Also find that political predispositions towards the ECB and business news consumption matters for receptivity

German Internet Panel

Online survey, probability sample of the general population in Germany, aged 16 to 75. Initial sample collected by strict random probability methods. Recruitment conducted offline with face-to-face interviews. Respondents invited to online panel.

	Time →						
	Wave 1 (Nov. 2014)				Wave 2 (Nov. 2015)		
Treatments		$\pi_{i,1}^T$			$\pi_{i,2}^T$		
Outcome measures	$\pi_{i,t}^0$		$\pi_{i,1}, \pi_{i,1}^5, \pi_{i,1}^{10}$			$\pi_{i,2}$	
Manipulation checks				✓			X
Additional measures			ECB, News, Business News			$p_{i,2}$	

Wave 1: Prior Inflation Expectations

1. Respondents given a scenario where a hypothetical person is said to have spend 1500 Euros per month for groceries, clothes, and seeing a hair dresser.
2. Asked by how much they think that persons spending for those items will increase over the next 12 month.
3. Given a list of different Euro amounts, in 1% intervals, ranging from “less than 1500 Euros” to “1650 Euros or more.”

Wave 1: Treatment

4. Respondents asked to consider inflation in Germany in general. They are given a short explanation what inflation means and about the role of the ECB with respect to inflation in the Eurozone.
5. Respondents then receive a vignette with a text that gives what the ECB thinks the current rate of inflation is as well as the ECB target rate using either *Vague Information* (low inflation/appropriate level) or *Precise Information* (1 percent/2 percent).

Wave 1: Posterior Inflation Expectations

6. All Respondents are then given their prior from step 1 in terms of the inflation rate, thus making their prior computationally comparable to the information in the vignette.
 - This is information they can use to adjust their prior expectations independent of the ECB information.
7. Then asked to estimate the current inflation rate and says: “considering the expectations by the ECB [...]”

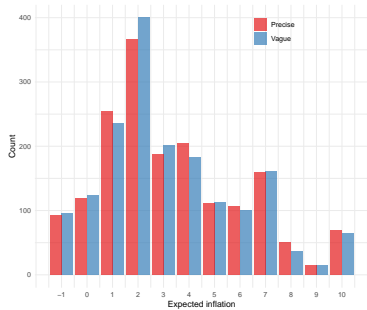


Figure 1: Respondents Prior Inflation Expectations

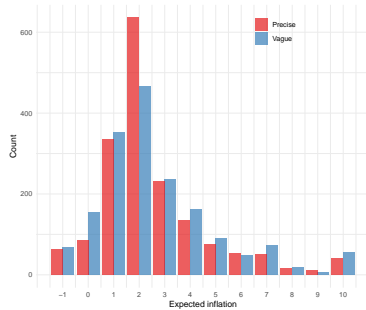


Figure 2: Respondents Posterior Inflation Expectations

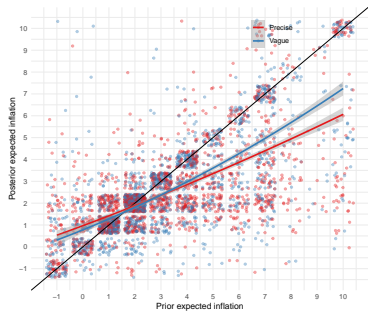


Figure 3: Respondents Prior Inflation Expectations by Treatment Group

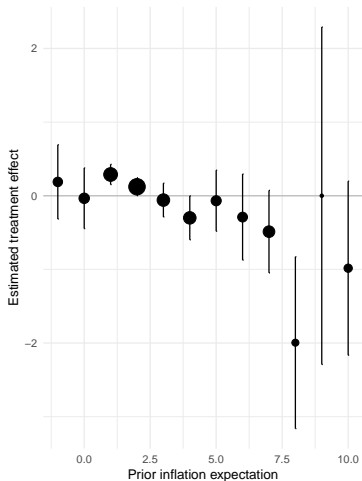


Figure 4: Respondents Updating by Expectations

One Year Later:

Wave 2 checks for length of information (rather than just content) (Short, Long) using Wave 1 prior (assume its stable).

- ▶ The effect of the prior in Wave 1 on the posterior in Wave 2 is smaller when receiving the short precise statement compared to ALL others
- ▶ Interestingly, the weight of the prior can be reduced with (short/precise) treatment and it seems that the length of the text not the numerical target is doing the work here.

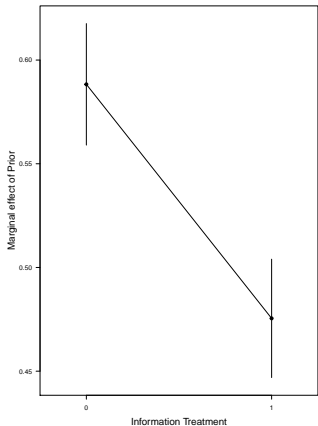


Figure 5: Marginal Effect of Vague (0) and Precise (1) Information on Priors (Wave 1)

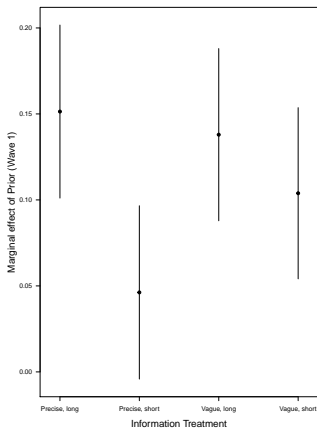


Figure 6: Marginal Effect of Information (Wave 2) on Priors (Wave 1) by content and length

Political Predispositions

Wave 1 asks about ECB doing a good job. Respondents rank from 1 to 5 scale.

- ▶ Asks about general news consumption and business news consumption. Respondents Self report.
- ▶ Asks about personal policy preferences for inflation. Do this a number of ways.

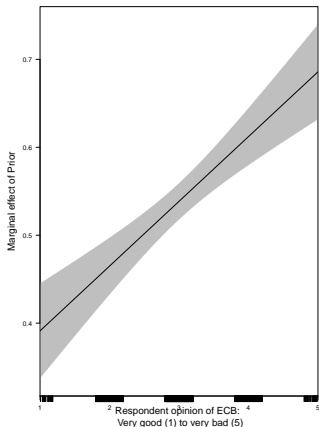


Figure 7: Marginal Effect of Prior on posterior Inflation Expectation by Attitudes towards the ECB

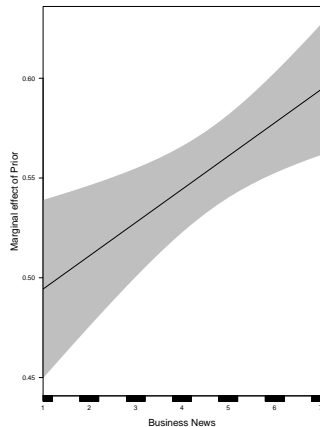


Figure 8: Marginal Effect of Priors on Posterior Inflation Expectation by Business News Consumption

Main Findings

- ▶ Respondents are sensitive to (short) precise information and also track actual inflation movements surprisingly well
- ▶ Those more favorable opinions of ECB more likely to update to ECB news (i.e. political opinions matter)
- ▶ ECB's quantitative definition of price stability (2%) stronger anchor than actual inflation data (1%) but length seems to be more important than numerical target.

Why does it matter?

- ▶ Effectiveness of CB communication depends on **political** as well as economic predispositions of receivers, including public support for institution
- ▶ Little evidence that central bank communication **crowds out** public signals (at least for avid readers of business news, Morris and Shin, 2002)
- ▶ Opposition to CB actions by elites (Jens Weidmann against the ECB or Donald Trump against Jerome Powell) might **limit effectiveness** of CB communication as a policy tool

Further Research

- ▶ Check for education and partisanship effects (education and political leaning)
- ▶ Check for other EU policy support, to see whether generalizable to Euroskepticism or actual CB opinions

Supplemental Information - Text Wave 1

Vague Information:: The European Central Bank expects the important interest rates to remain at the current level or below for a longer period of time. This assessment rests on the general expectation of **low inflation**. The expected inflation for the Eurozone is in line with the objective of the Central Bank to keep inflation **at an appropriate level**.

Vague Information:: The European Central Bank expects the important interest rates to remain at the current level or below for a longer period of time. This assessment rests on the general expectation of **low inflation of 1 percent per year**. The expected inflation for the Eurozone is in line with the objective of the Central Bank to keep inflation **at 2 percent**.

Precise, long text: The ECB extends its purchase of bonds to those issued by Eurozone governments, issuers with development objects, and issued by European institutions. Overall, monthly purchases of a total value of **60 million Euros** are planned. These purchases will continue until **September 2016** at a minimum. The program serves to fulfill the ECB mandate to ensure price stability and reach a medium-term inflation rate **close to 2%**.

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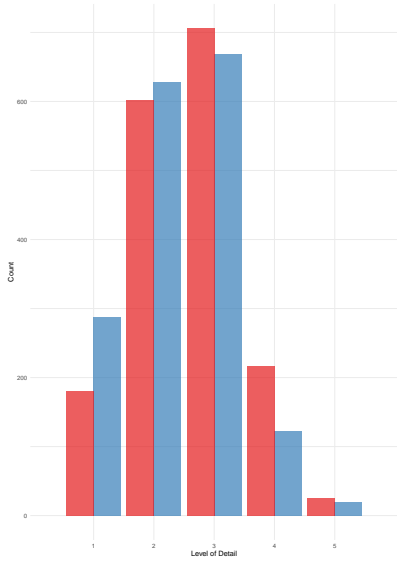
Precise, short text: The ECB extends its purchase of bonds. Purchases of a total value of **60 million Euros** will continue until **September 2016** and serve to fulfill the ECB mandate to ensure price stability and reach a medium-term inflation rate **close to 2%**.

Vague, short text: The ECB extends its purchase of bonds. Purchases of **high total value** will continue until the **middle of next year** and serve to fulfill the ECB mandate to ensure price stability and reach a medium-term inflation rate close to **an appropriate level**.

Supplemental Information

Number of observations by anchoring treatment group:

	Frequency	Proportion
Wave 1		
Precise information	1729	.499
Vague information	1735	.501
	3464	
Wave 2		
Precise information short	769	.25
Precise information long	767	.25
Vague information short	768	.25
Vague information long	768	.25
	3072	



	<i>Dependent variable:</i>			
	Posterior wave 1			
	(1)	(2)	(3)	(4)
Prior	0.619*** (0.590, 0.648)	0.542*** (0.484, 0.599)	0.644*** (0.559, 0.729)	0.374*** (0.293, 0.455)
Precise information treatment	0.278*** (0.104, 0.452)	0.295*** (0.121, 0.469)	0.278*** (0.103, 0.452)	0.272*** (0.100, 0.444)
newsConBusiness		-0.059** (-0.107, -0.011)		
newsCon			-0.001 (-0.066, 0.064)	
performanceECB				0.064 (-0.050, 0.177)
Prior × Precise information treatment	-0.120*** (-0.161, -0.079)	-0.128*** (-0.169, -0.087)	-0.119*** (-0.160, -0.078)	-0.113*** (-0.153, -0.073)
Prior × newsConBusiness		0.017*** (0.006, 0.028)		
Prior × newsCon			-0.004 (-0.018, 0.009)	
Prior × performanceECB				0.074*** (0.049, 0.099)
Constant	0.628*** (0.505, 0.751)	0.912*** (0.652, 1.173)	0.635*** (0.228, 1.041)	0.502*** (0.162, 0.841)
Observations	3,464	3,438	3,457	3,457
R ²	0.457	0.457	0.460	0.474
Adjusted R ²	0.457	0.456	0.459	0.473

*p<0.1; **p<0.05; ***p<0.01